

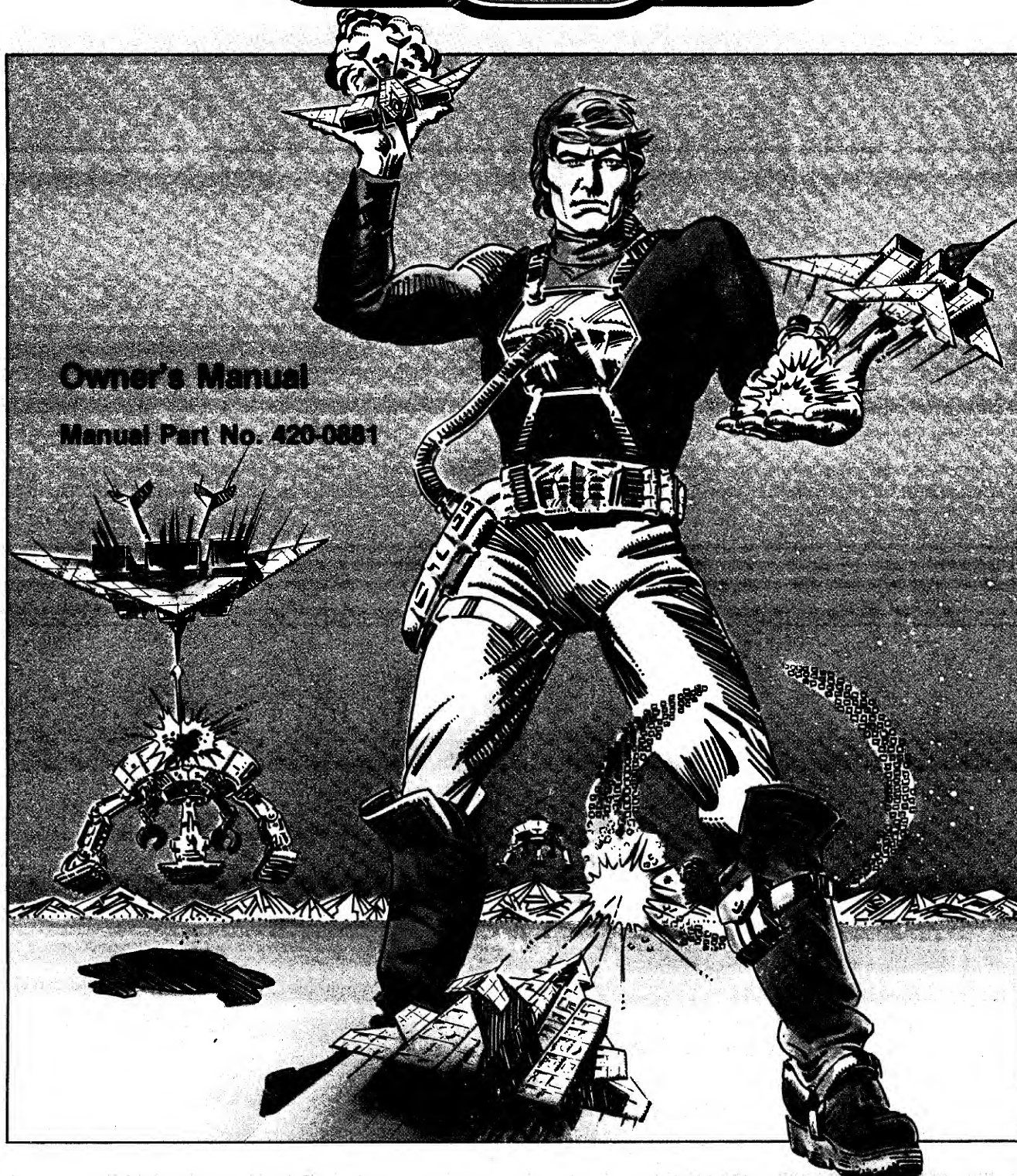
BUCK ROGERS

PLANET OF ZOOM™

SEGA

Owner's Manual

Manual Part No. 420-0881





Owner's Manual

Manufactured By
SEGA[®]
TLX 910-335-1621

Buck Rogers[™] Planet of Zoom[™] Owner's Manual
Copyright © 1983 by SEGA Electronics, Inc., All Rights Reserved
BUCK ROGERS[™] Indicates a Trademark of the Dille Family Trust

Table of Contents

List of Illustrations	1
Introduction	2
Important Notes	3
Game Concept	4
Scoring	5
Option Selection	6
Theory of Operation	7
Self-Test	10
Parts Catalog	
Upright Assemblies	14
Top Assembly	15
AC Junction Box Assembly	21
Power Supply Assembly	23
Volume Control Block Assembly	26
Coin System Assembly	29
Light & Speaker Assembly	31
Flourescent Lamp Assembly	33
Control Panel Assembly	35
Cockpit Assemblies	37
Top Assembly	38
Cabinet Front Assembly	42
Cabinet Rear Assembly	45
Sub Cabinet Front Assembly	48
Sub Cabinet Rear Assembly	51
Reject Button Assembly	54
Upper Flourescent Lamp Assembly	56
Score Board Assembly	58
Control Unit Assembly	60
Interface Board Assembly	62
Accelerator Mechanism Assembly	64
Accelerator Pedal Assembly	66
Sensor Board Assembly	67
Power Supply Assembly	69
Regulator Board Assembly	71
Regulator Unit Assembly	73

TABLE OF CONTENTS (Continued)

Power Amp 32VDC, 16W	75
7-Segment LED Board Assembly	76
8-Way Joystick Assembly	77
IC Board Case Assembly	80
Common Assemblies	82
Color Monitor Assembly	83
Electrohome G07-907	85
Wells Gardner K4675	93
Nanao MC-2000-S	110
Wells Gardner K4961	122
Component Shelf Assembly	139
Game Electronics Assembly	142
IC Board Assembly	145
CPU Board Program Assembly	147
CPU Board Assembly	149
EPROM Board Program Assembly	153
EPROM Board Assembly	155
Sound Board Assembly	158
Switching Regulator	162
Schematics	166
Comments Mailer	

List of Illustrations

Logic Board Block Diagram	13
Electrohome G07-907 Block Diagram	92
Wells Gardner K4675 Block Diagram	109
Nanao MC-2000-S Block Diagram	121
Upright Cabinet Wiring Diagram	167
Cockpit Cabinet Wiring Diagram	168
Regulator Board	
AC Junction Box	
Power Supply	169
Volume Control Block	170
Coin System	171
IC Buffer Board	
LED Board	
Power Amp 32VDC, 16W	
Regulator Unit	172
Switching Regulator 601-0158	173
Switching Regulator 601-0692	174
CPU Board	175
EPROM Board	181
Sound Board	191
Electrohome G07-907	194
Wells Gardner K4675	195
Nanao MC-2000-S	196
Wells Gardner K4961	197

Introduction

BUCK ROGERSTM PLANET OF ZOOMTM is a micro-processor based coin-operated electronic game, that makes extensive use of digital integrated circuitry and television monitor concepts. This manual is intended for the use of the maintenance technicians who possess a general working knowledge of solid-state circuitry and video monitor theory. Any individual NOT knowledgeable in these areas SHOULD NOT attempt repair of the electronic portions of the game.

In addition to this manual and training in electronics, troubleshooting and repair will be facilitated by: access to general electronic type handtools, a multimeter, a 50 to 100 MHz oscilloscope and a logic probe would be helpful.

Technical assistance is available toll-free by calling:

1-800-854-1938 outside California

1-800-722-8576 inside California

Parts information assistance is available toll-free by calling:

1-800-854-1900 outside California

1-800-722-8575 inside California

Questions or comments concerning BUCK ROGERSTM PLANET OF ZOOMTM or any of our games are welcome and should be directed to:

Customer Service Manager

SEGA Electronics, Inc.

16250 Technology Drive

San Diego, California 92127-1985

Important Notes

The following note is included in compliance with FCC rules:

WARNING: This equipment generates and uses radio frequency energy and if not installed and used properly, i.e., in strict accordance with the instruction manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Other Notes

NEVER replace any components with anything other than exact replacement parts.

NEVER remove circuit board connections while power is on.

DO NOT replace fuses with anything other than the proper value. A blown fuse indicates an overload condition within the game. Replacing fuses with a higher value can cause severe damage to internal components if an overload occurs.

ALWAYS consult the manual before attempting repairs.

SPARE PARTS will be maintained at SEGA Electronics, Inc., for a period of five (5) years after the date of manufacture of the game concerned.

Game Concept

Flying skills and targeting accuracy must be honed to a fine edge, as you take command of Earth's last remaining hope of defense. Responsive 8-way joystick in hand, excitement is the name of the game as the Buck Rogers in all of us pilots a remote controlled spacecraft through the PLANET OF ZOOM™.

In the 25th century, Buck Rogers is confronted by a wicked warrior-world . . . the Planet of Zoom. It is a gargantuan out-of-orbit world that devastates everything in its path, and is ruled by an evil source ship. Buck Rogers mission: To destroy the source ship and liberate the Planet of Zoom before it reaches Earth.

Equipped with single-shot or rapid fire neutron cannon, and 2 level (upright) or 4 level (cockpit) speed control, you race your ship into and through heavily armed channels, through formidable smasher tunnels and around the towering spires of the cosmic city. You bank, dive and climb in pursuit of bizarre alien ships and ground forces to reach the climatic scene and primary target, the all powerful enemy source ship.

Fantastic game play graphics, great stereo sound effects, intense action and unique player controls makes this versatile one or two player video game as super as the Buck Rogers hero it is named for. With 3 to 6 extra ships (operator selectable) your score mounts and rounds proceed until the loss of the last player ship.

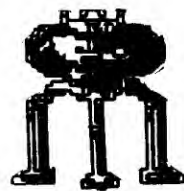
Scoring



100



200



300



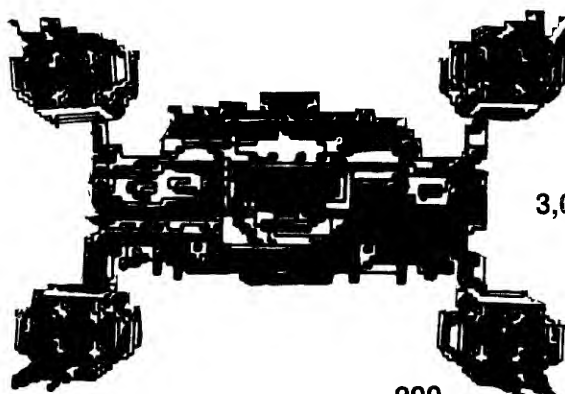
500



200



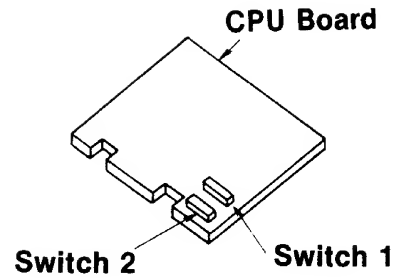
200



3,000

200

Option Selection



OPTION

SWITCH #1

	1	2	3	4	5	6	7	8
1 COIN/1 CREDIT	ON	ON	ON	ON	ON	ON	X	X
1 COIN/2 CREDIT	OFF	ON	ON	OFF	ON	ON	X	X
1 COIN/3 CREDIT	ON	OFF	ON	ON	OFF	ON	X	X
1 COIN/6 CREDIT	OFF	OFF	ON	OFF	OFF	ON	X	X
2 COIN/1 CREDIT	ON	ON	OFF	ON	ON	OFF	X	X
3 COIN/1 CREDIT	OFF	ON	OFF	OFF	ON	OFF	X	X
4 COIN/1 CREDIT	ON	OFF	OFF	ON	OFF	OFF	X	X
5 COIN/1 CREDIT	OFF	OFF	OFF	OFF	OFF	OFF	X	X

OPTION

SWITCH #2

	1	2	3	4	5	6	7	8
COLLISIONS	ON	X	X	X	X	X	X	X
NO COLLISIONS	OFF	X	X	X	X	X	X	X
ACCEL. BY PEDAL	X	ON	X	X	X	X	X	X
ACCEL. BY BUTTON	X	OFF	X	X	X	X	X	X
BEST 5 SCORES ON	X	X	ON	X	X	X	X	X
BEST 5 SCORES OFF	X	X	OFF	X	X	X	X	X
SCORE DISPLAY ON	X	X	X	OFF	X	X	X	X
SCORE DISPLAY OFF	X	X	X	ON	X	X	X	X
DIFFICULT	X	X	X	X	ON	X	X	X
NORMAL	X	X	X	X	OFF	X	X	X
COCKPIT	X	X	X	X	X	X	X	ON
UPRIGHT	X	X	X	X	X	X	X	OFF
3 EXTRA SHIPS	X	X	X	X	X	ON	ON	X
4 EXTRA SHIPS	X	X	X	X	X	OFF	ON	X
5 EXTRA SHIPS	X	X	X	X	X	ON	OFF	X
6 EXTRA SHIPS	X	X	X	X	X	OFF	OFF	X

ON = CLOSED

OFF = OPEN

X = NOT USED

Theory of Operation

BUCK ROGERSTM is a "state-of-the-art" electronic microprocessor based, video game. The result of hundreds of hours of work, design, research, experiment and more work. However, as with any electronic device, component failure or other problems can result in a game that doesn't function properly, or doesn't function at all. In either case, your game is "down", and so critically, are your profits.

Your objective is to fix it as quickly as possible, and logical troubleshooting goes a long way toward that repair. Although many troubleshooting methods may be familiar to you, procedural logic is common among them, and might be stated in this order: visual inspection, symptom recognition, symptom isolation, function isolation, component isolation and repair. Familiarity with the equipment in question will allow you to bypass one or more of these steps, as any particular problem may be obvious to you, or may have happened before. In general though, these 6 steps form a good premise upon which to approach your "down" game.

An extremely important item in our procedure is the first mentioned, giving the gear the "once over". A large percentage of failures found in electronics, show themselves visually and often a great deal of time can be saved by inspecting for burnt or blown components, loose or disconnected wiring or connectors, or PCB traces burnt or pulled up. Thorough visual inspections become increasingly important the closer you get to the faulty item, and should be repeated each time another portion of the game is eliminated. Symptom recognition (as with all electronic troubleshooting) in your BUCK ROGERS depends first, on knowing what a proper display is, and second, knowing how your display differs from a normal one. Symptom isolation follows naturally; (i.e., "I have no picture", "I have no sound", "I have no control over the ship", "the picture is scrambled"), ergo, a video, audio, input or logic problem. Function isolation, such as a sync problem with the video, requires that you consider those functions that go to make up video sync. Is it a monitor problem, or an "on-the-board" problem? A monitor input check to verify the signal will tell you. Does the board have the voltage (from the power supply) that it needs? Yes? We must have a board failure, as we've just isolated down to function. Taking our sync problem further, before we begin our search for an individual component, let's reapply that first item in

our "Logical Troubleshooting Procedure". Look at the board. Open resistors, diodes, and capacitors often give themselves away.

Noticing a trace literally burned open can save you serious "down-time". The board looks OK, so on we go. Specific component isolation relates to the specific nature of the failure, component commonality, proper inputting (both signal and power) and proper outputting (as in the case of an output held high, low, or floating by input port failure in the succeeding state). More general problems (such as a total loss of video sync) requires the more involved procedure of systematic elimination of possibilities. This operation can be expedited however, by dividing the circuit in half, establishing a "go-no/go" at that point, and again dividing the suspect circuit portion in half. The largest possible areas can be eliminated in this manner, dividing and subdividing until the individual component failure is found.

BUCK ROGERSTM is a microprocessor based, digital-integrated circuit computer video game. The heart of the computer is the CPU (IC13, Zone 8-D, Sht. 1, CPU Bd., 834-5120), a Z80A (P/N 315-0041). The Alpha type device MUST ALWAYS be used, as the Z80 is not fast enough to run the programs.

Master timing is crystal-driven at 20.00 MHz (X1, Zone 8-A, Sht. 1, CPU Bd., 834-5120) through IC34, 28, and 35. CPU timing is taken from IC34 p-7, applied to IC35 p-2 (Zone 8-B, Sht. 1, CPU Bd., 834-5120) clocked out of IC35 at p-13, inverted by IC28 (Zone 8-C, Sht. 1, CPU Bd., 834-5120) and finally applied to pin-6 of the CPU (IC13). Additionally, IC13 provides 5 MHz and 10 MHz for video timing and character generation, as well as processed interrupts and timing for the Select Address processor IC50 (Zone 8-D, Sht. 5, CPU Bd., 834-5120).

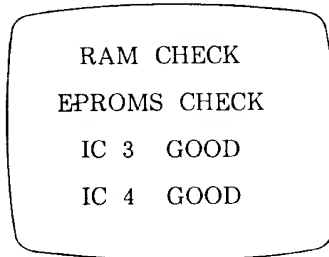
Manual system reset (Power-On) appears as a LO at IC16 p-4 (Zone 8-D, Sht. 1, CPU Bd., 834-5120) and is then felt at pin-26 of the CPU (IC13, Sht. 1, Zone 8-D, CPU Bd., 834-5120). Normal program interrupts (INT) are felt at pin-16 of the Z80A (an edge-triggered LO), and are the result of Input/Output activity timing with vertical blanking (an approx. 2 msec. instruction interrupt). The WAIT signal is used to synchronize that I/O activity during an interrupt to the CPU. IC1 and 2 (Zone 6-D, Sht. 1, CPU Bd., 834-5120) are address bus drivers. Two of the sixteen address lines pass through IC30 (Zone 6-D, Sht. 1, CPU Bd., 834-5120) and subsequently drive the Chip Enable inputs of EPROM IC's 3, 4, 15 and RAM IC 14 (Sht. 1, CPU Bd., 834-5120). IC's 113, 114, 121 and 122 (Sht. 4, CPU Bd., 834-5120) are input ports on the data bus. The 44-pin flat connector supplies player input information, service switch,

game start and coinage to the input ports. IC119 and 121 input Coin B, and IC120 and 121 input Coin A, together with Game Start, Self-Test, Up/Down and Acceleration to I/O processor IC106 (Zone 4-D, Sht. 4, CPU Bd., 834-5120). IC111, 112 and 114 accesses/buffers Player Left/Right data, IC111 and 113 interfaces Fire data, and Option Selection is shared by all 4 74LS244's. Located in the Volume Control Block is the Self-Test switch. When closed, it applies a LO to IC119 p-6 (Zone 7-C, Sht. 4, CPU Bd., 834-5120) initiating a systems/function verification outlined on the following page:

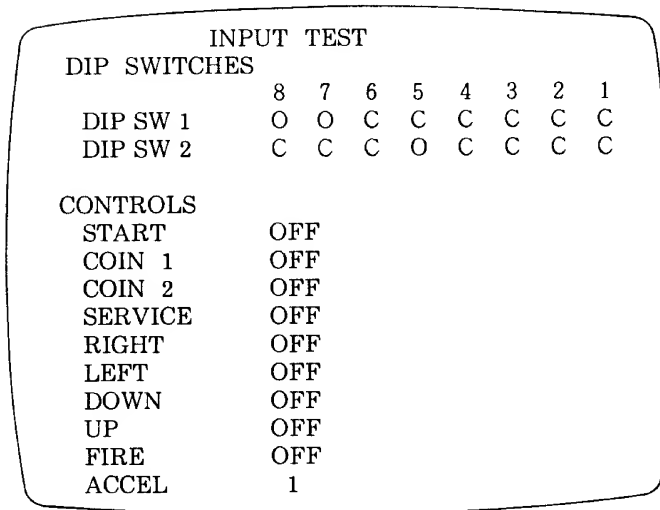
Self-Test

BUCK ROGERS™ is equipped with a diagnostics sequence that is initiated by pressing the Self-Test button located on the Volume Control Block Assembly. The test appears in the following order, with each major category ending with the press of the Self-Test button:

1.

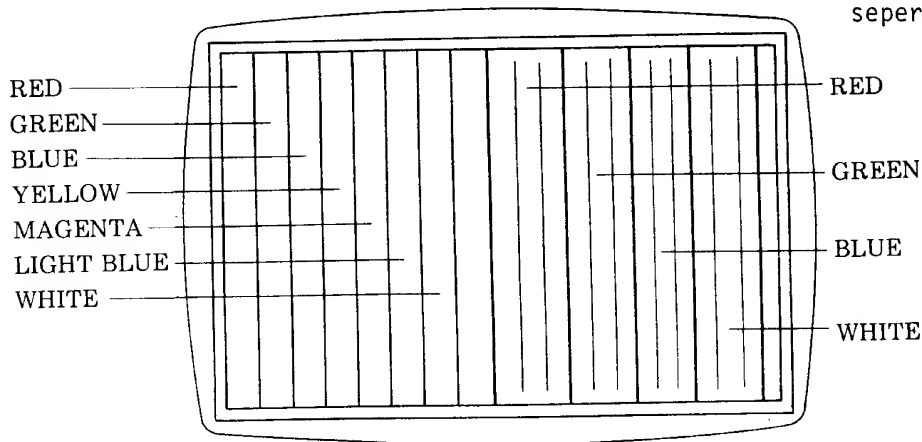


2.



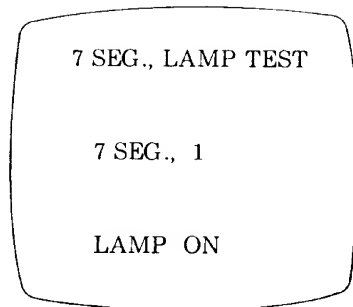
- Switch condition
(ON or OFF) is verified
by actuation.

3.



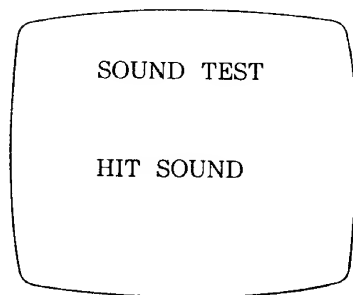
- Color tracking and
seperation

4.



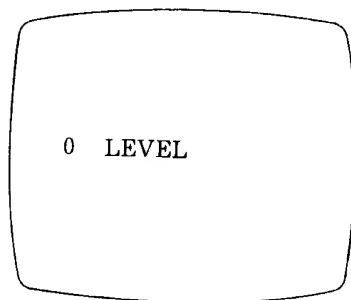
- START button sequences LED numerical read-out 0 - 9

5.



- FIRE button initiates each sound audibly.
- START button sequences each sound in turn.

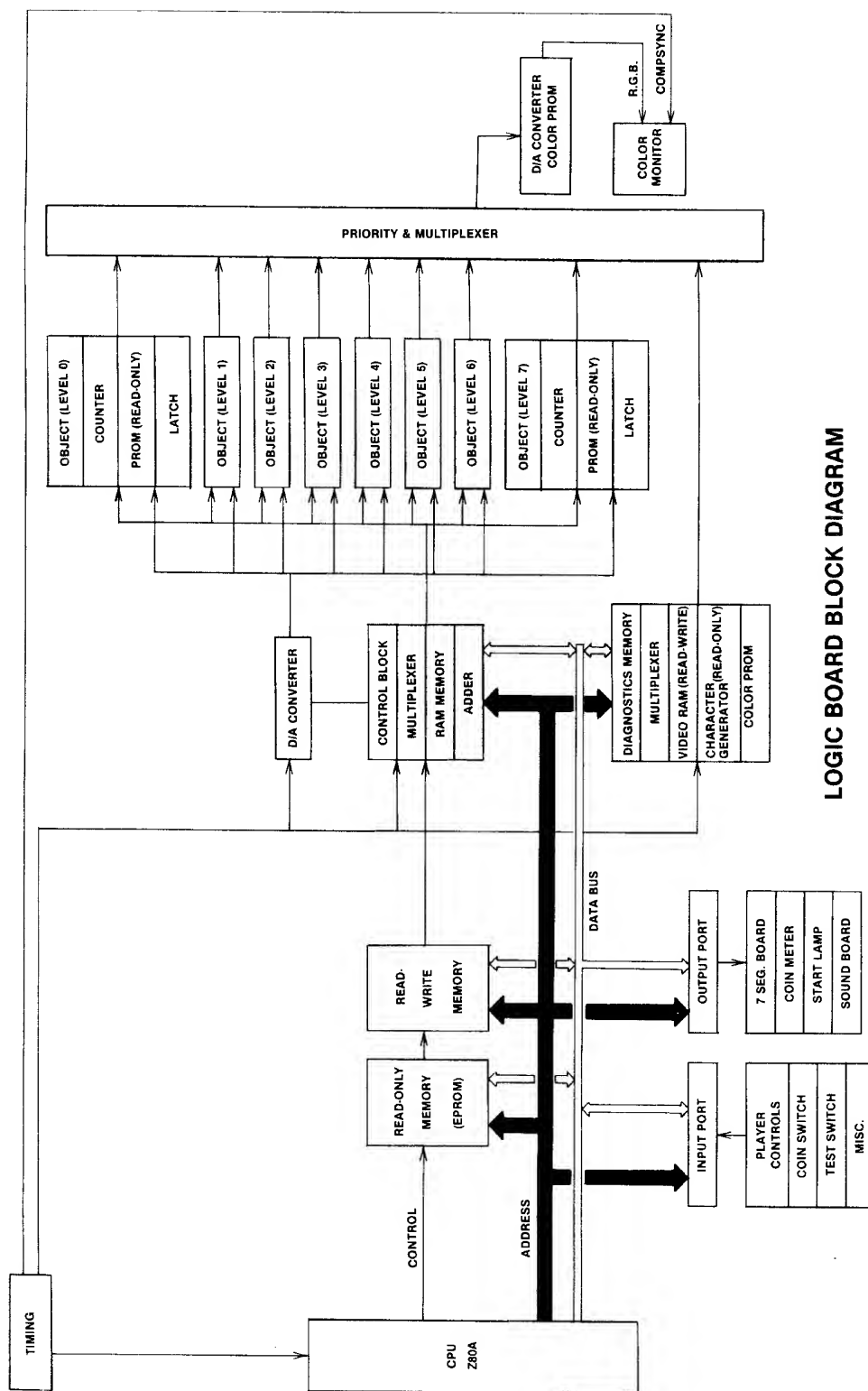
6. Character ROM Test



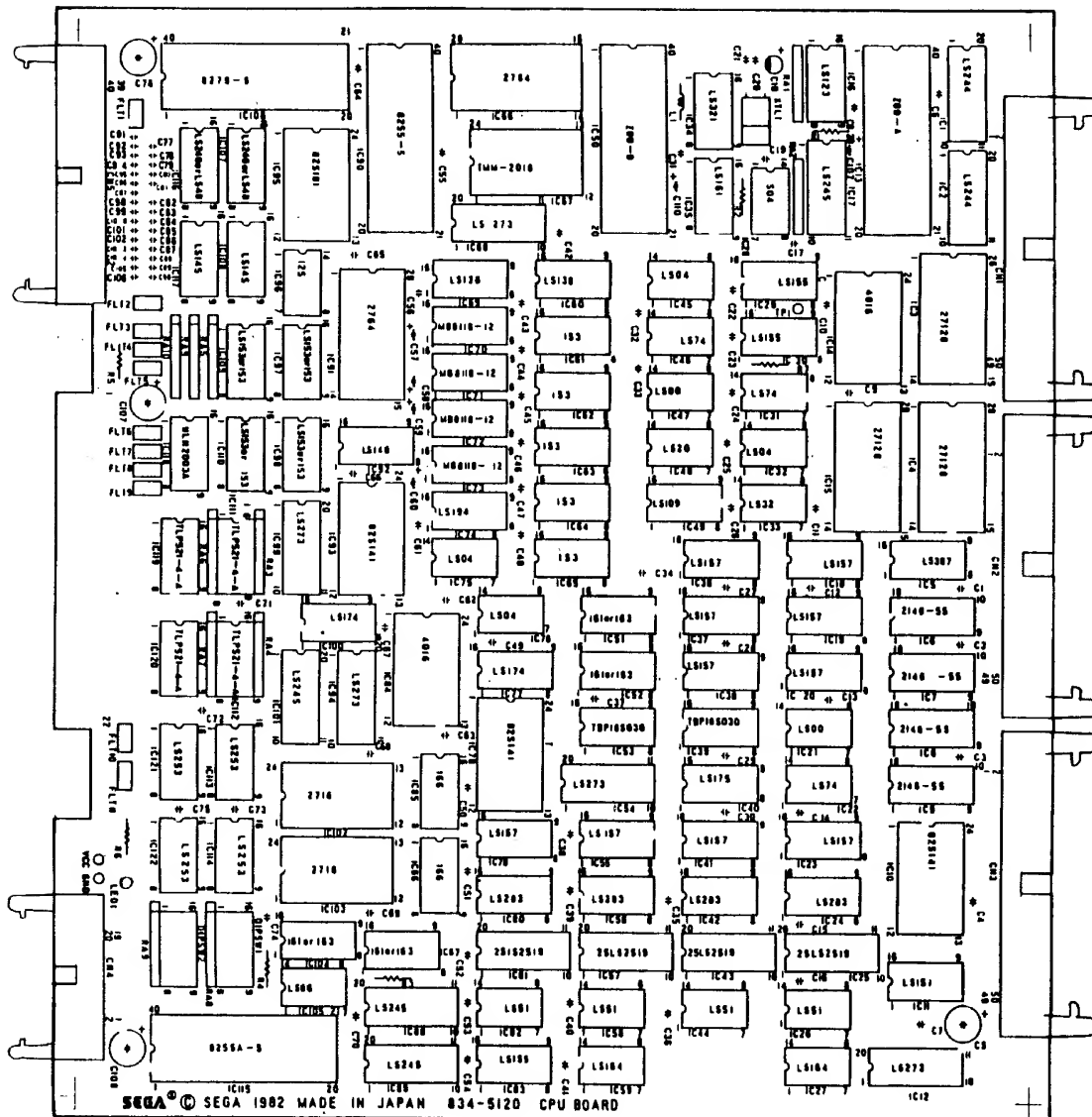
- Video display of character memory by Object Level.
- START button sequences Object Levels 0 through 7.

Due to the striking graphics employed in BUCK ROGERSTM, memory requirements for background generation are significant. On the EPROM Bd. (834-5121) there are sixteen (16) 27128-3 16K X 8 EPROMs that hold video character, positioning, color and timing information. Background generation accessible memory (RAM) is provided by TTL IC14 and IC84 (Zone 2-D and 4-B respectively, Sht. 1, on the CPU Bd., 834-5120), in addition to IC's 6-9 on Sht. 3 of the CPU (834-5120). Back on the EPROM Board, program storage is organized into eight (8) levels of multiplexed data for troubleshooting efficiency (Sheets 3 through 10, EPROM Bd., 823-5121), with final pre-CPU input "mux" occurring on Sht. 2, EPROM Bd., 834-5121. Armed with program data and input port data, the CPU can then integrate timing and sync (Sht. 2, CPU Bd., 834-5120) with color requirements (Sht. 6, CPU Bd., 834-5120) to produce complete color video at the Output Ports consisting of IC's 97, 98, 109 and 110 (Sht. 6. CPU Bd., 834-5120).

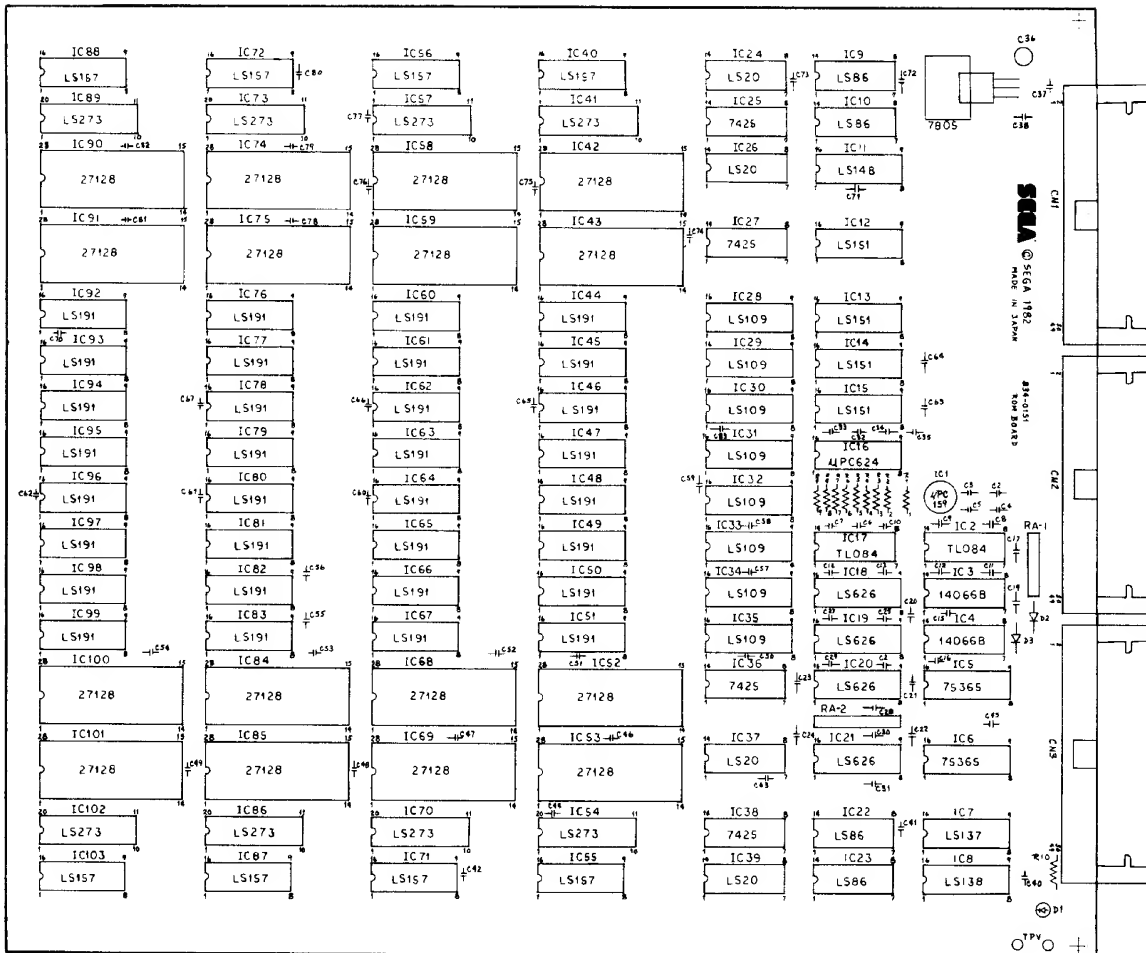
Just as the microprocessor Z80A is the heart of the game computer, so too is the 8255A-5 (IC113, Zone 2-D, Sht. 4, CPU Bd., 834-5120) the center of activity for Sound. Called a Sound Generator, IC113 interfaces data and address bus, as well as the noise generators on the Sound Bd. (834-5122), through the 20 pin flat cable, enabling specific sounds processing circuits. These circuits consist of individual sounds for Player ship flying sounds, rebound, explosion, laser and alarm. Those complete sounds not originating within the 8255A-5 are enabled by the Sound Generator through the noise generators on the Sound Bd. IC28 and VR1 (Volume Control, Sht. 1, Zone 6-A, Sound Bd.) set input biasing for the Audio Amplifier LA446 at an 8 ohm load.



LOGIC BOARD BLOCK DIAGRAM

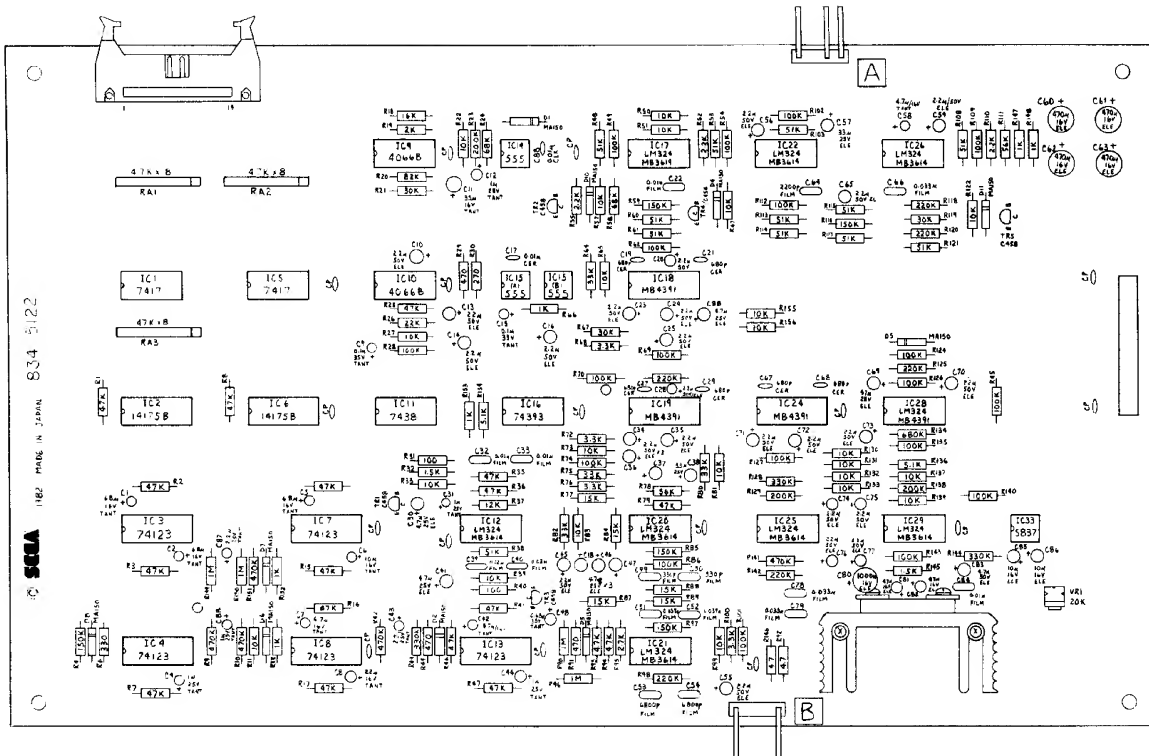


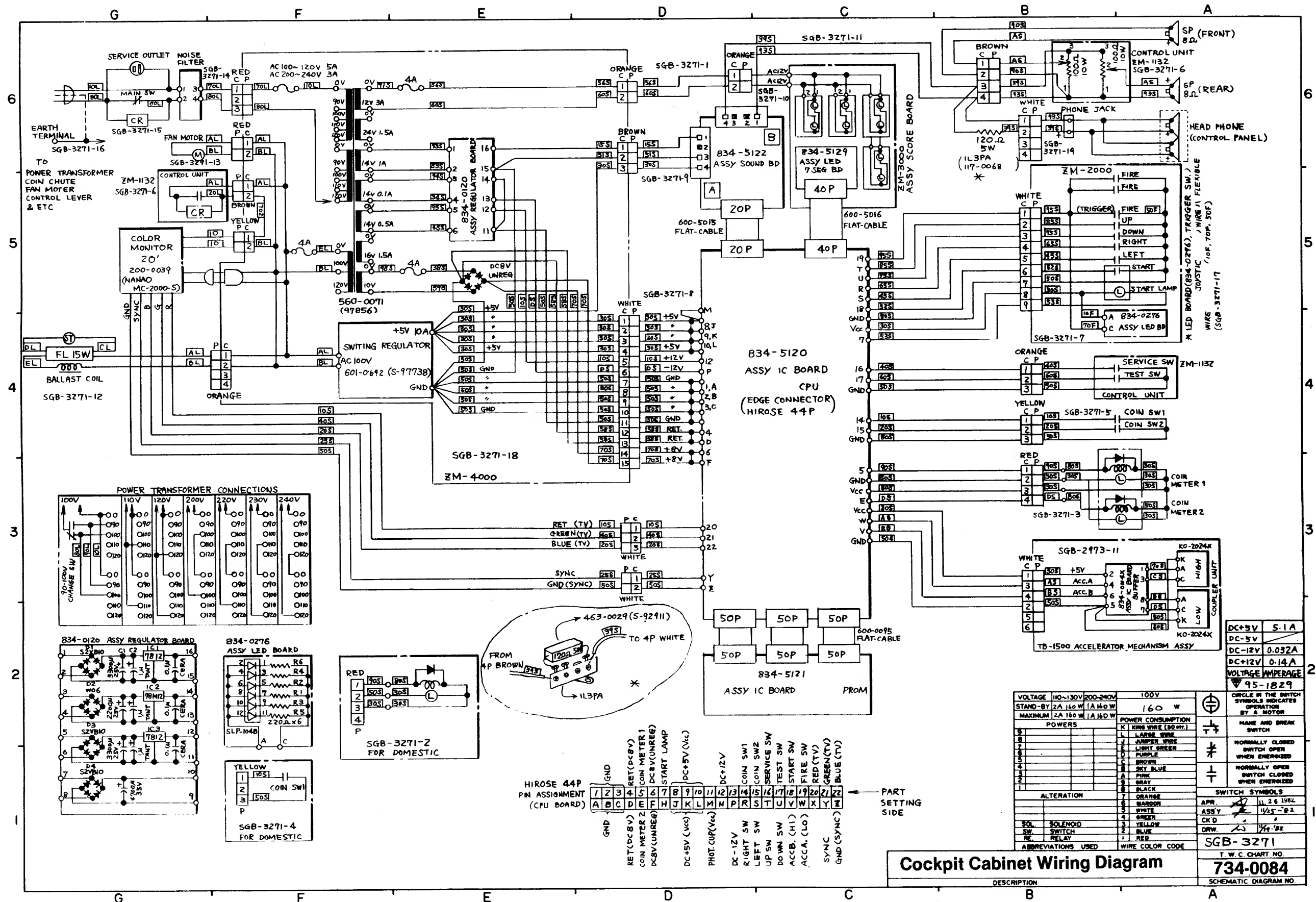
834-5121



Sound Board Assembly

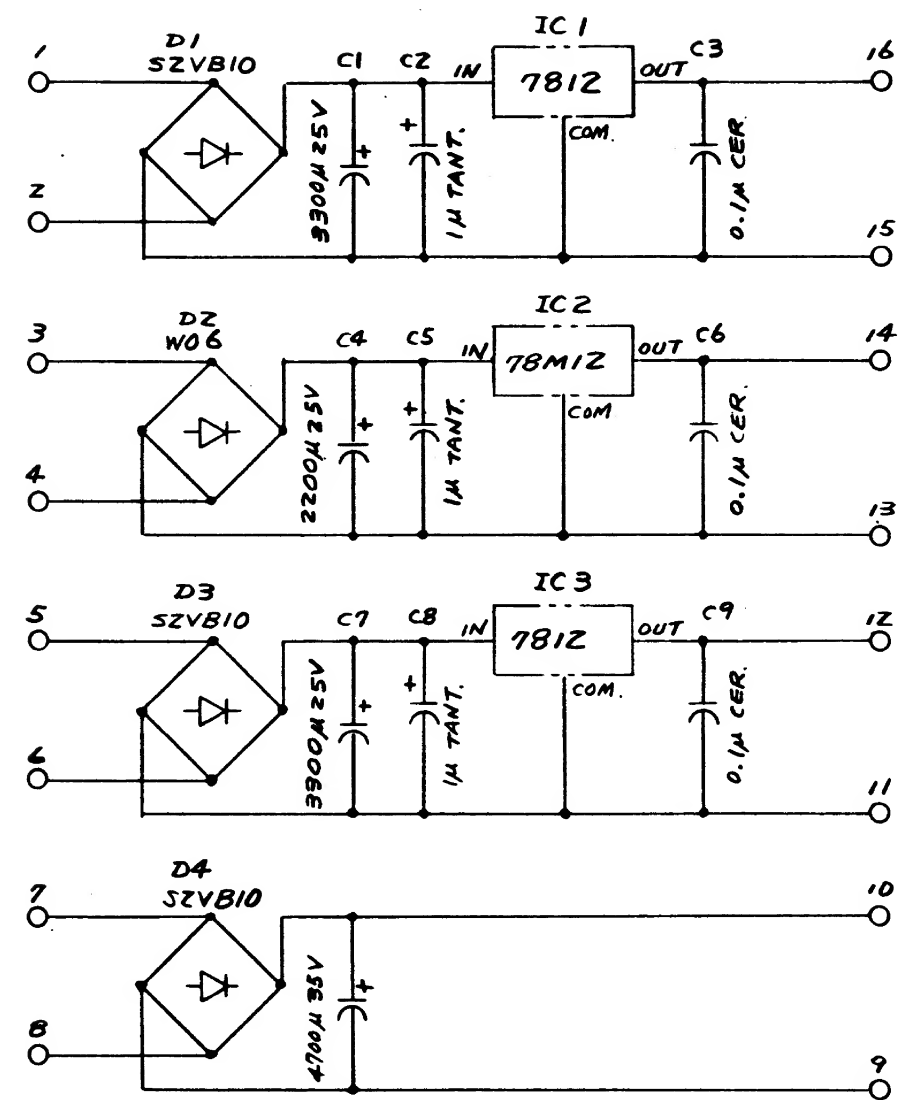
834-5122





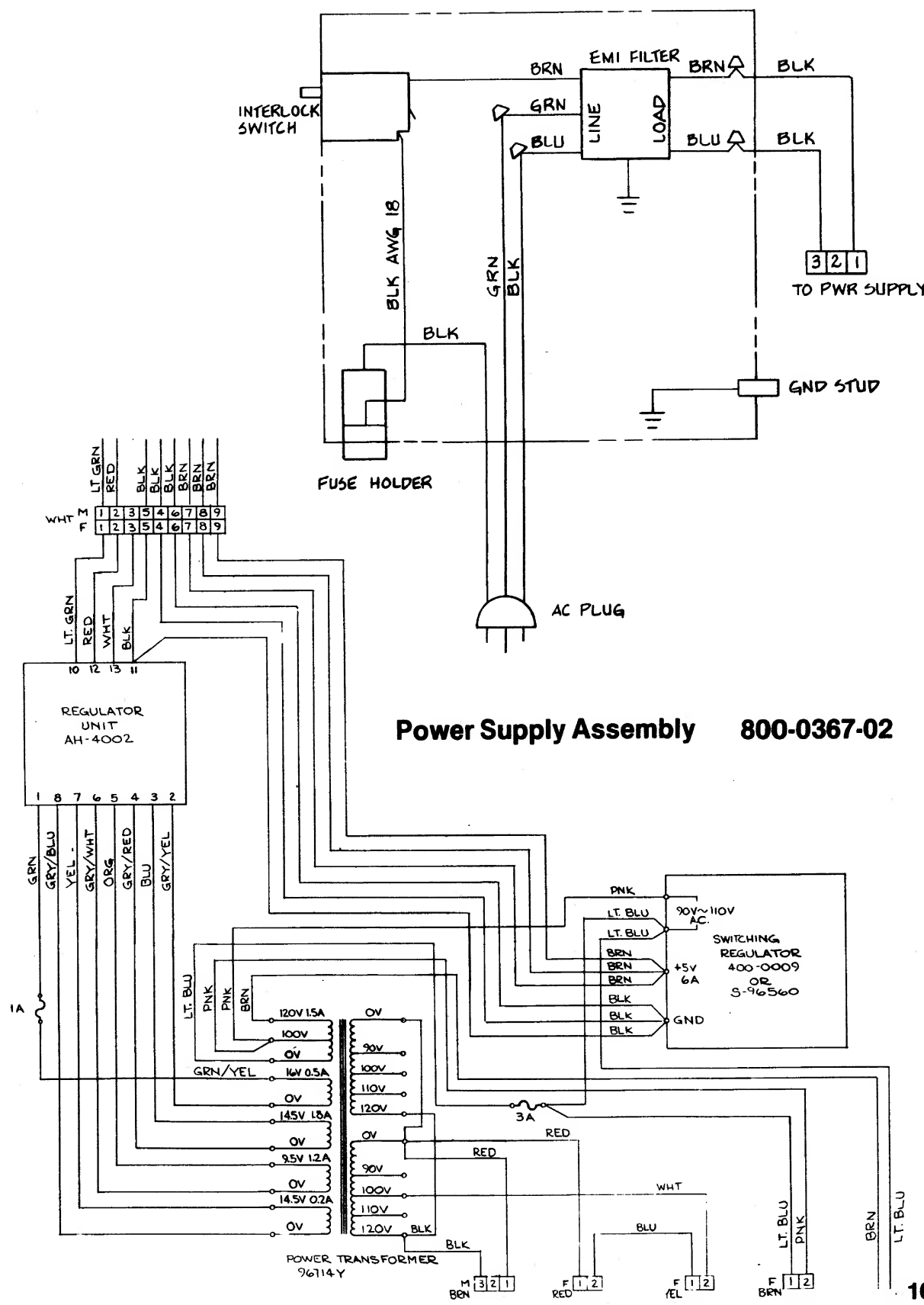
Regulator Board Assembly

834-0120



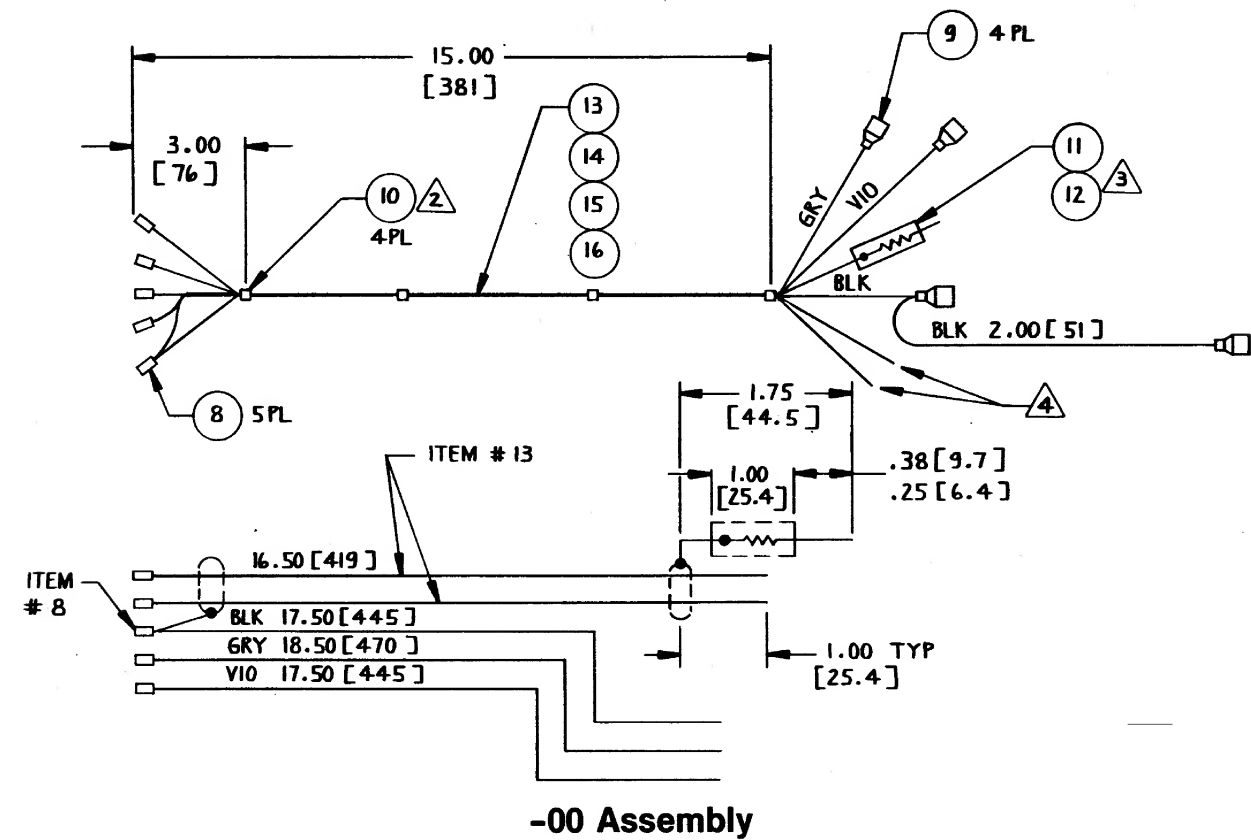
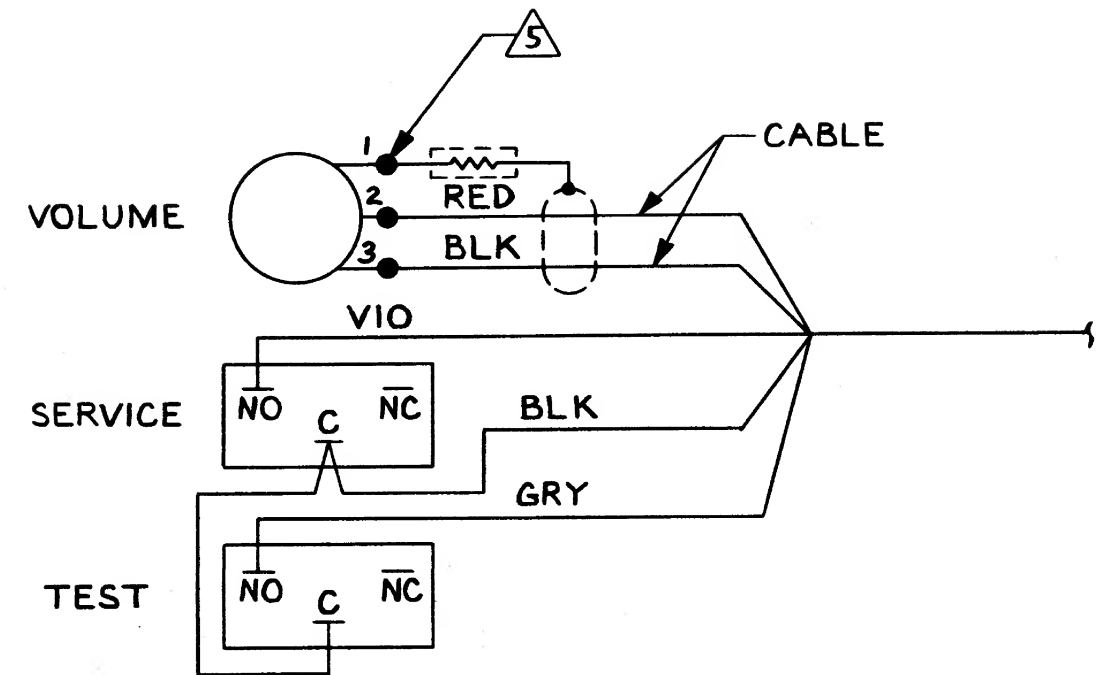
AC Junction Box Assembly

800-3244



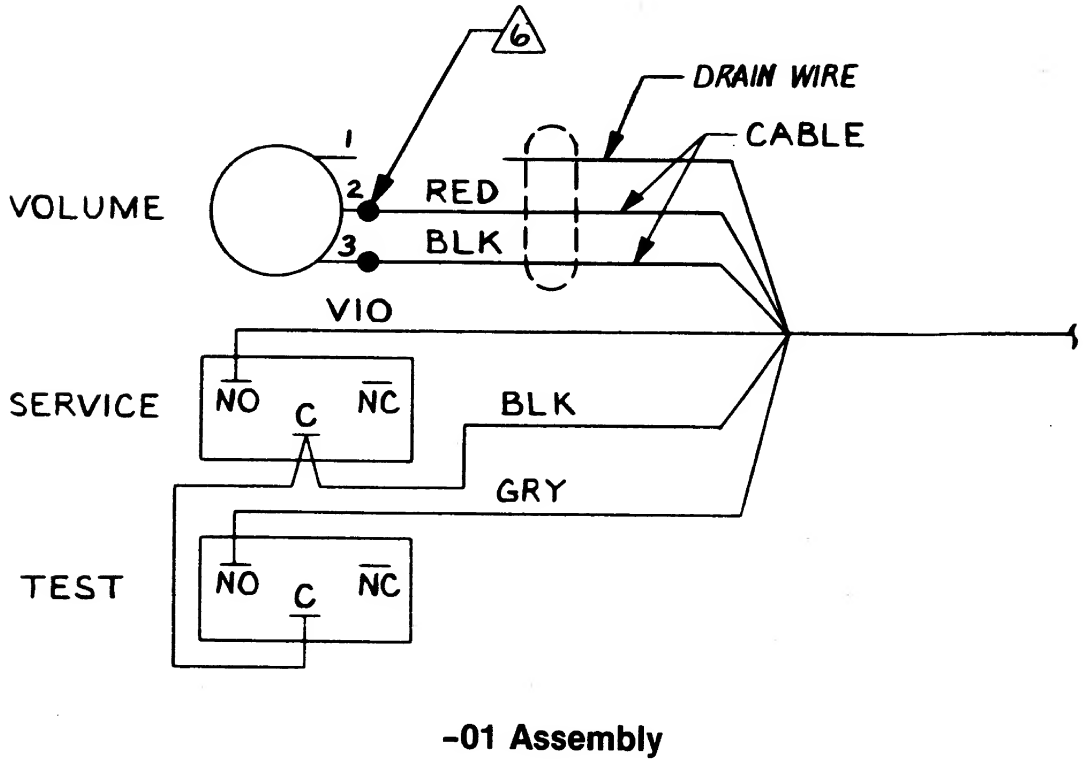
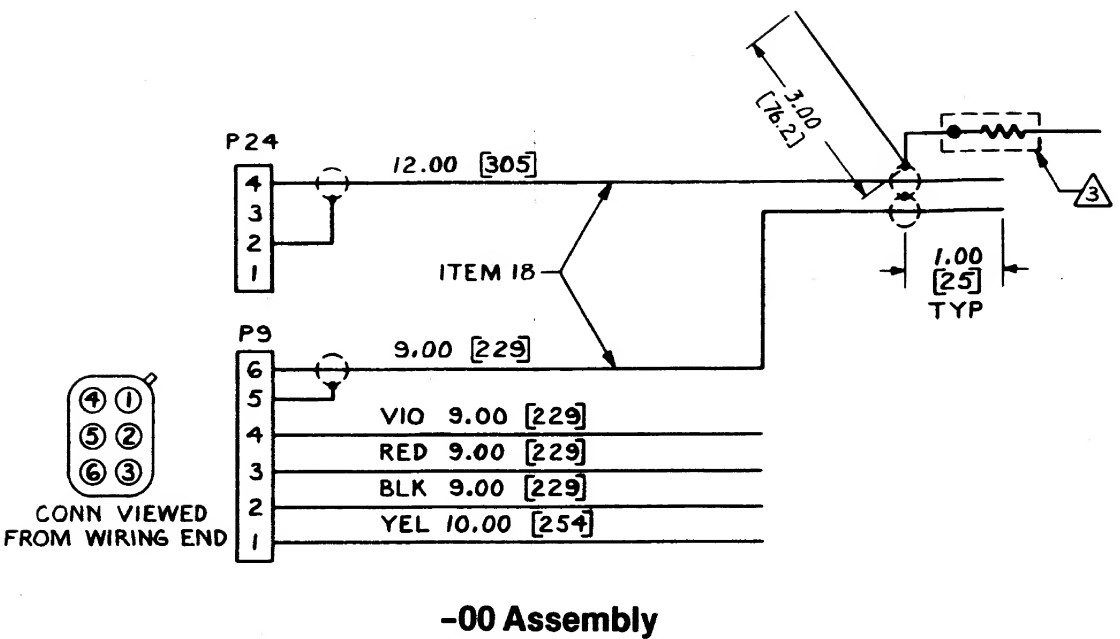
Volume Control Block Assembly

800-3282



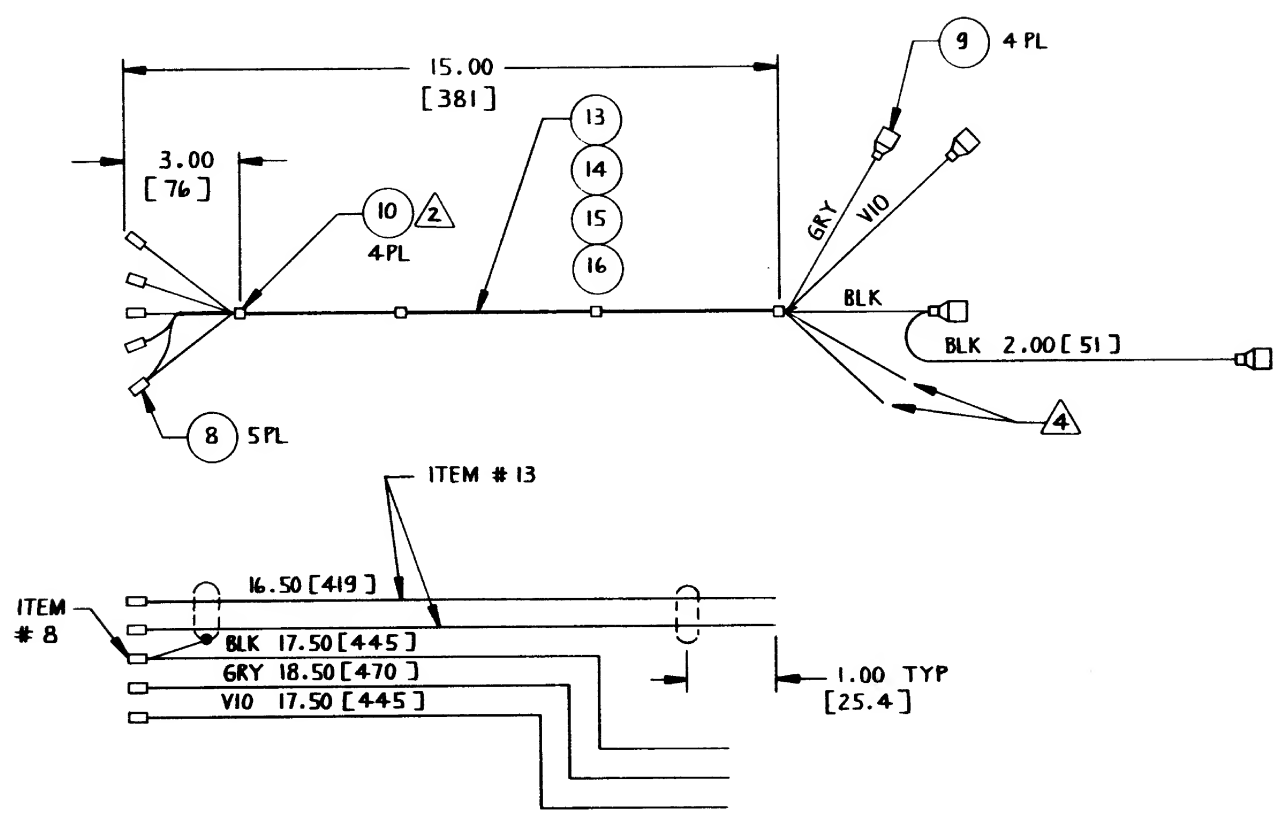
Volume Control Block Assembly

800-3282

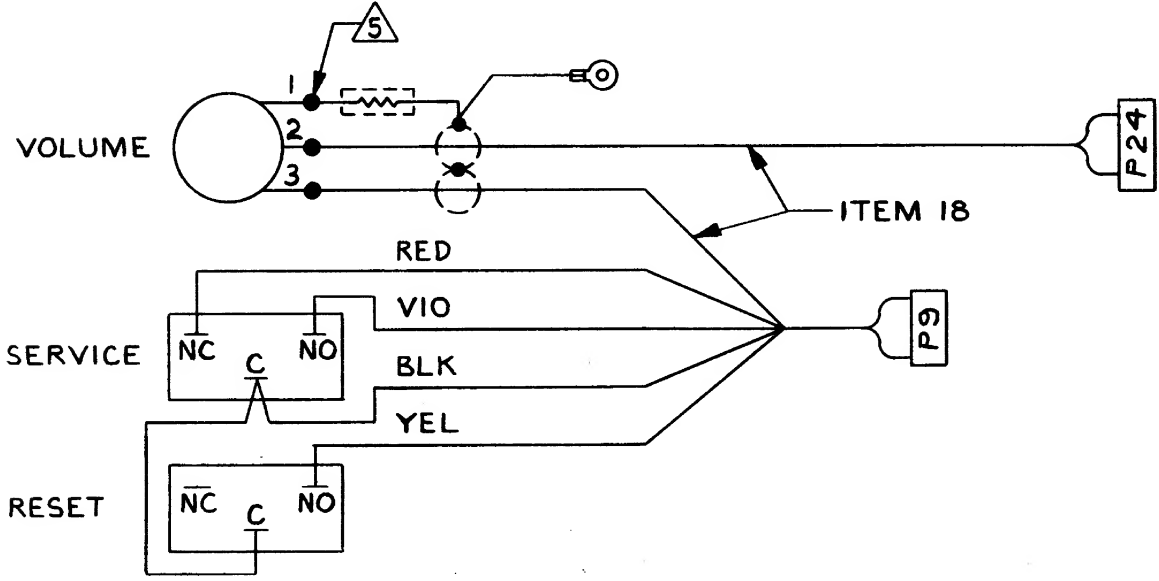


Volume Control Block Assembly

800-3282



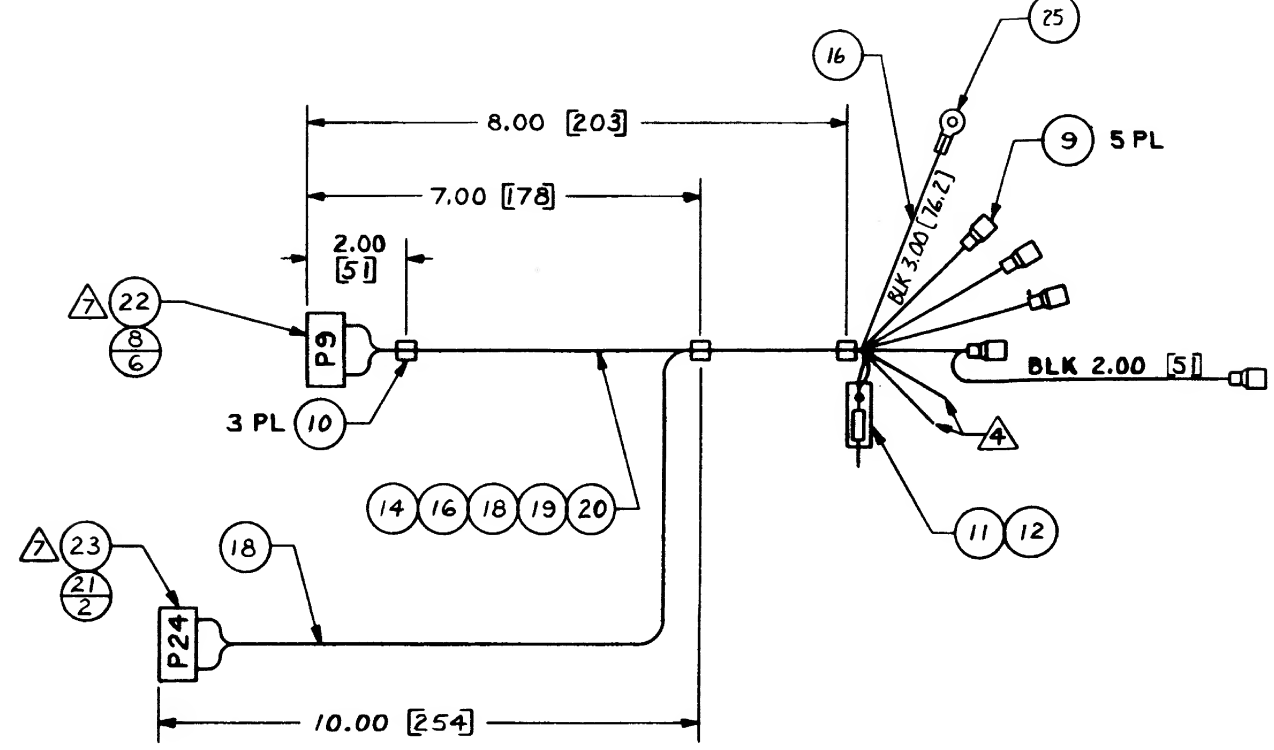
-01 Assembly



-02 Assembly

Volume Control Block Assembly

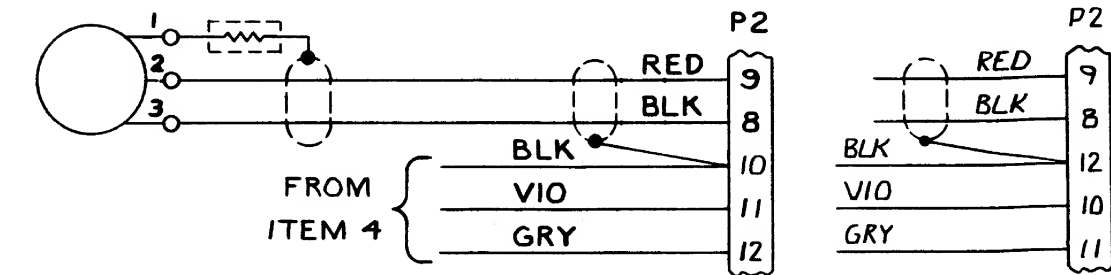
800-3282



-02 Assembly

Coin System Assembly

800-3294-01

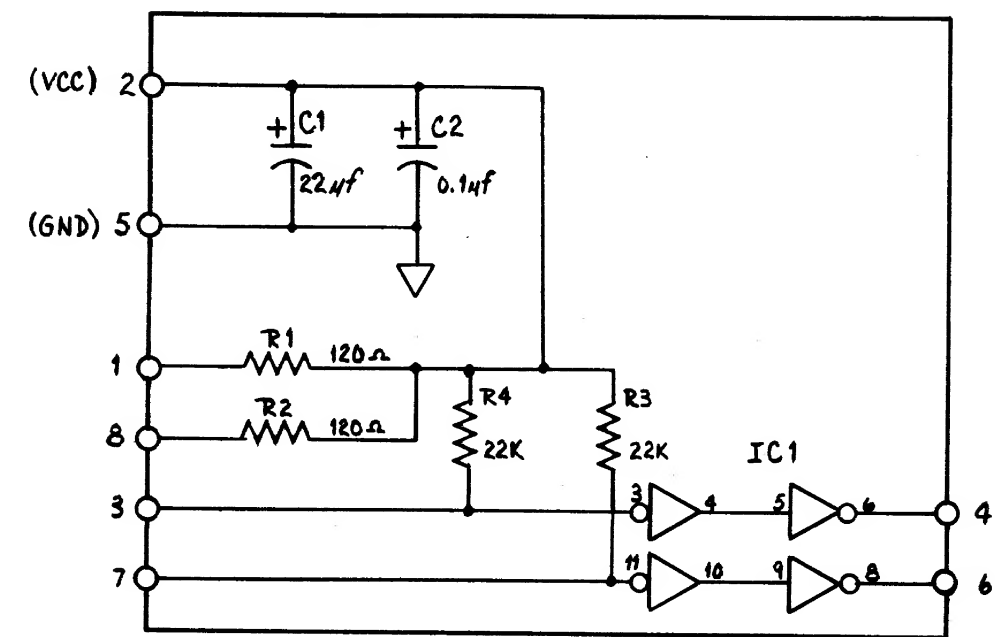


WIRING FOR -00 ASSY

WIRING FOR -01 ASSY

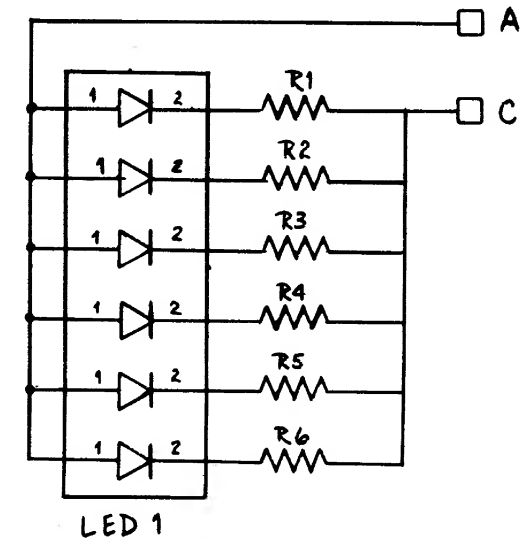
IC Buffer Board Assembly

834-0104



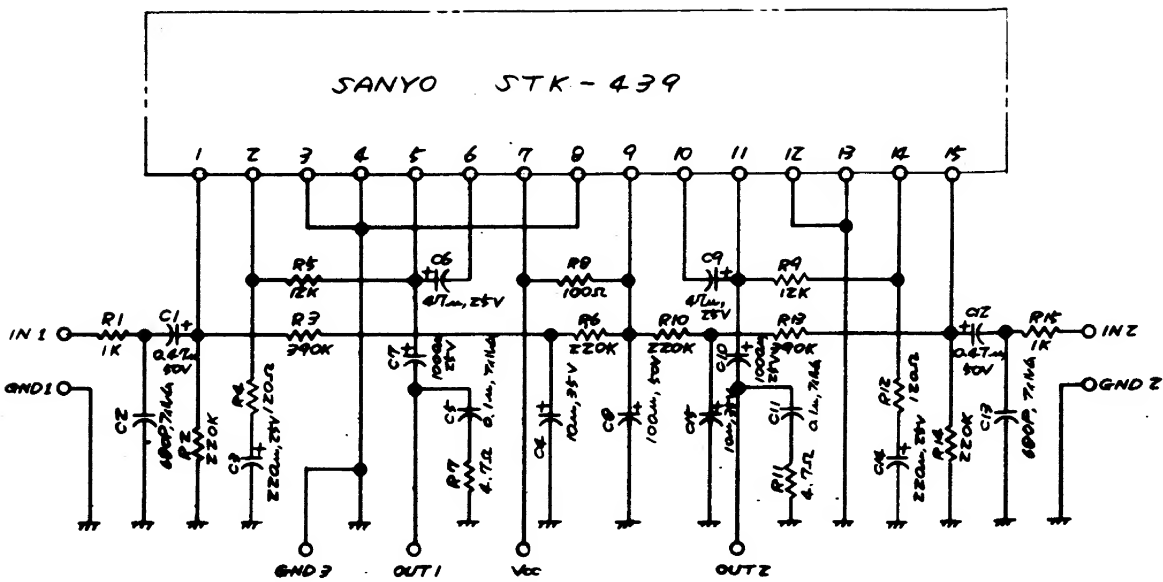
LED Board Assembly

834-0276



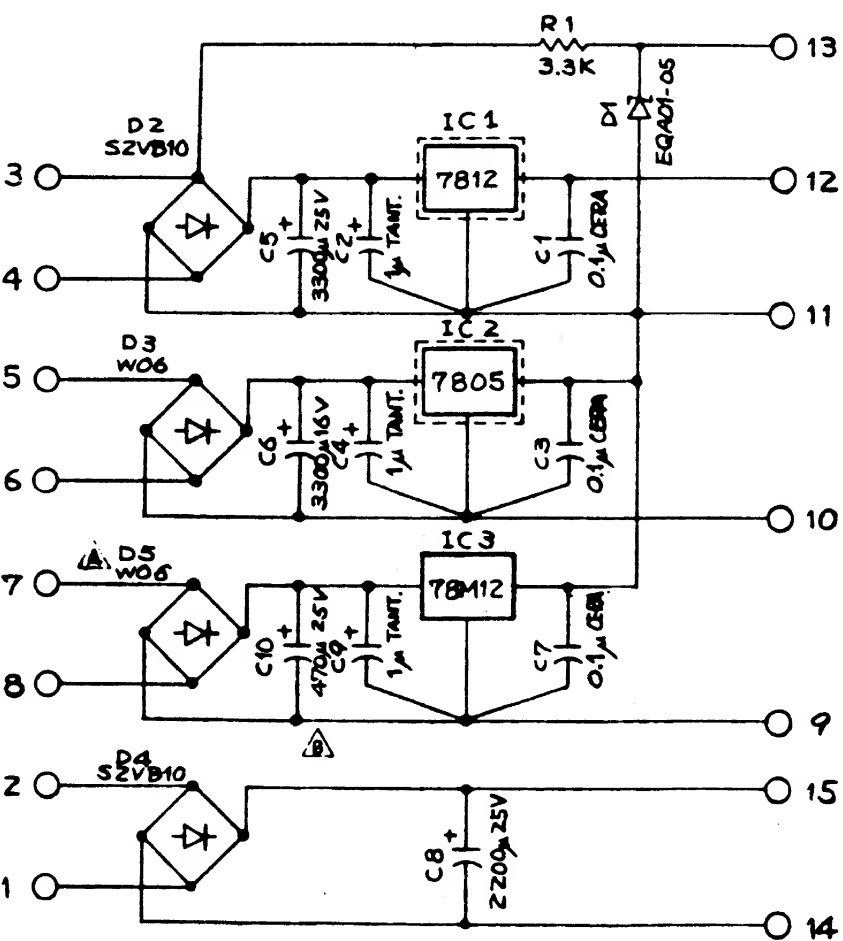
Power Amp Assembly

834-0121

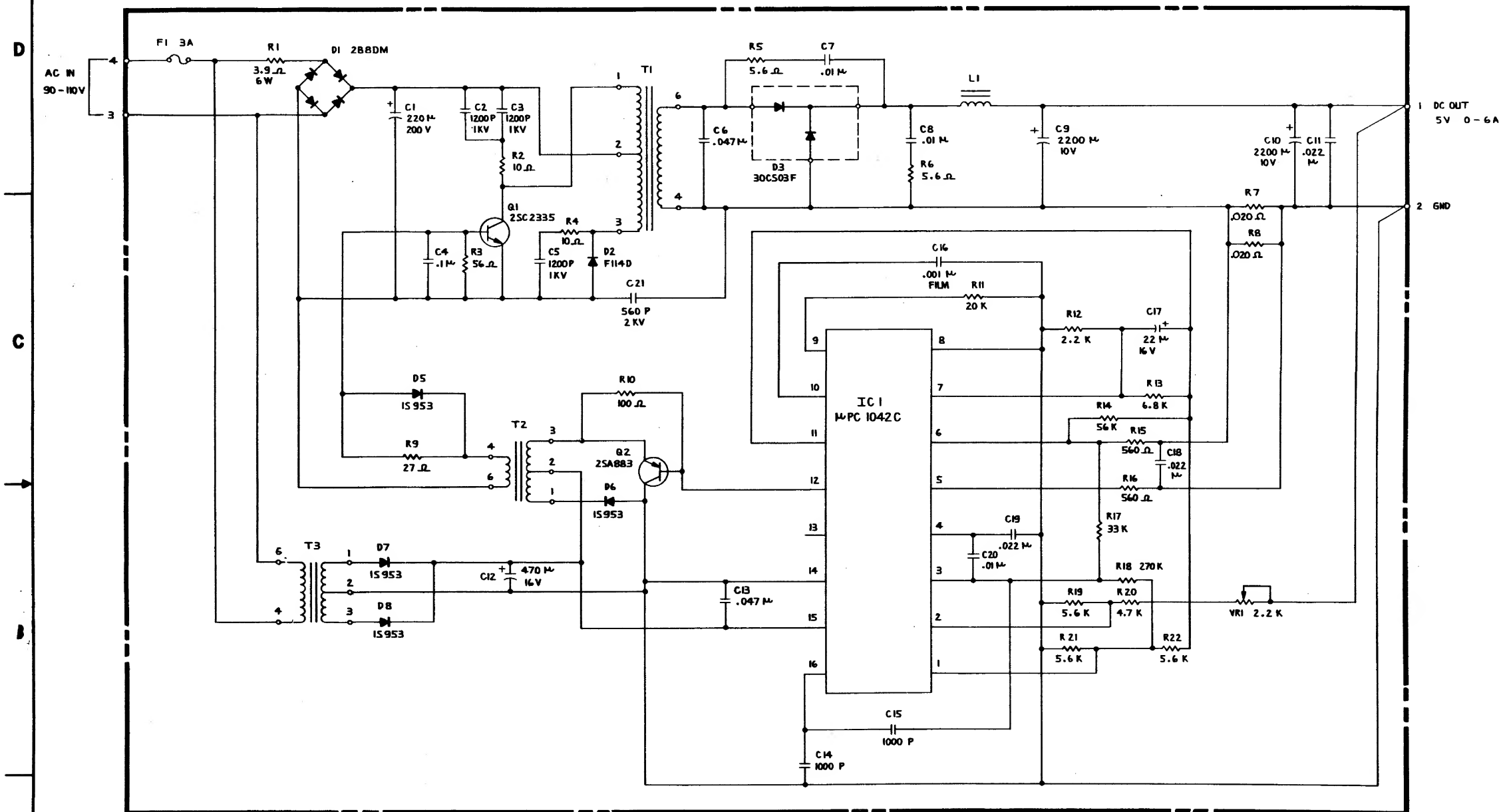


Regulator Unit

601-0612



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED	SD	8-14-61	Salant



NOTES :
1. R7,R8 AS REQUIRED OTHERWISE USE JUMPER WIRE .

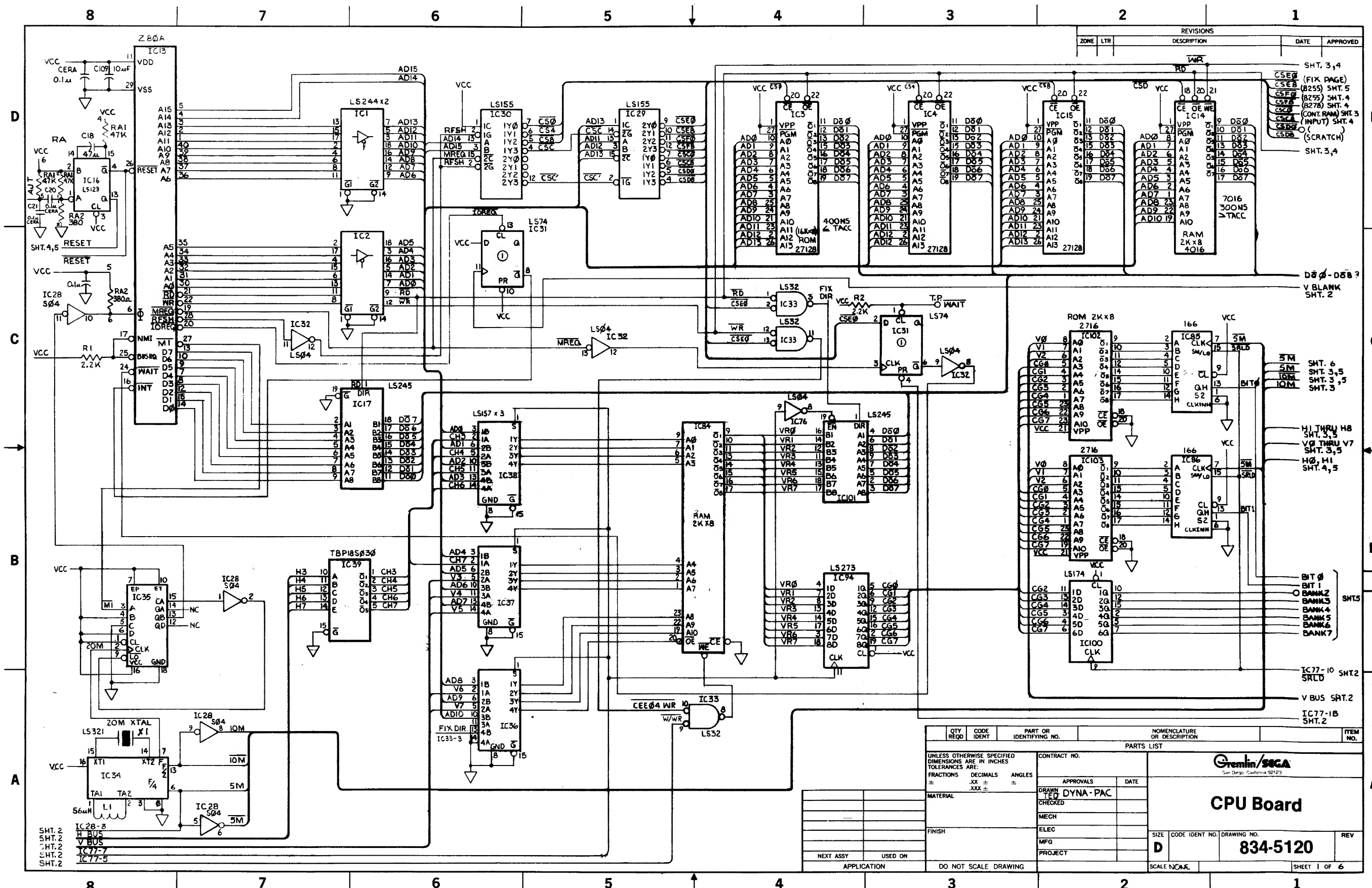
QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		CONTRACT NO.		
FRACTIONS	DECIMALS	ANGLES		
±	.XX ±	±		
MATERIAL		APPROVALS		
		DATE		
FINISH		DRAWN SOM DRUMS		
		8-17-61		
NEXT ASSY		CHECKED G. GRICE		
USED ON		8-17-61		
APPLICATION		ELEC		
		MFG		
		PROJECT		
DO NOT SCALE DRAWING		SIZE CODE IDENT NO. DRAWING NO.		
		D 601-0158		
		REV A		
		SCALE NONE		
		SHEET 1 OF 1		

Grain/SCA
San Diego, California 92123

Switching Regulator

601-0158

A



REVISIONS			
ZONE	LTR	DESCRIPTION	DATE

SHT. 3,4
(FIX PAGE)
(8255) SHT. 5
(8255) SHT. 4
(CONT. RAM) SHT. 3
(INPUT) SHT. 4
(SCRATCH)
SHT. 3,4


D8-D8.7
V BLANK
SHT. 2

SHT. 6
SHT. 3,5
SHT. 3,5
SHT. 3

H1 THRU H8
SHT. 3,5
V0 THRU V7
SHT. 3,5
H0, H1
SHT. 4,5

BIT 0
BIT 1
BANK2
BANK3
BANK4
BANK5
BANK6
BANK7
SHT. 5

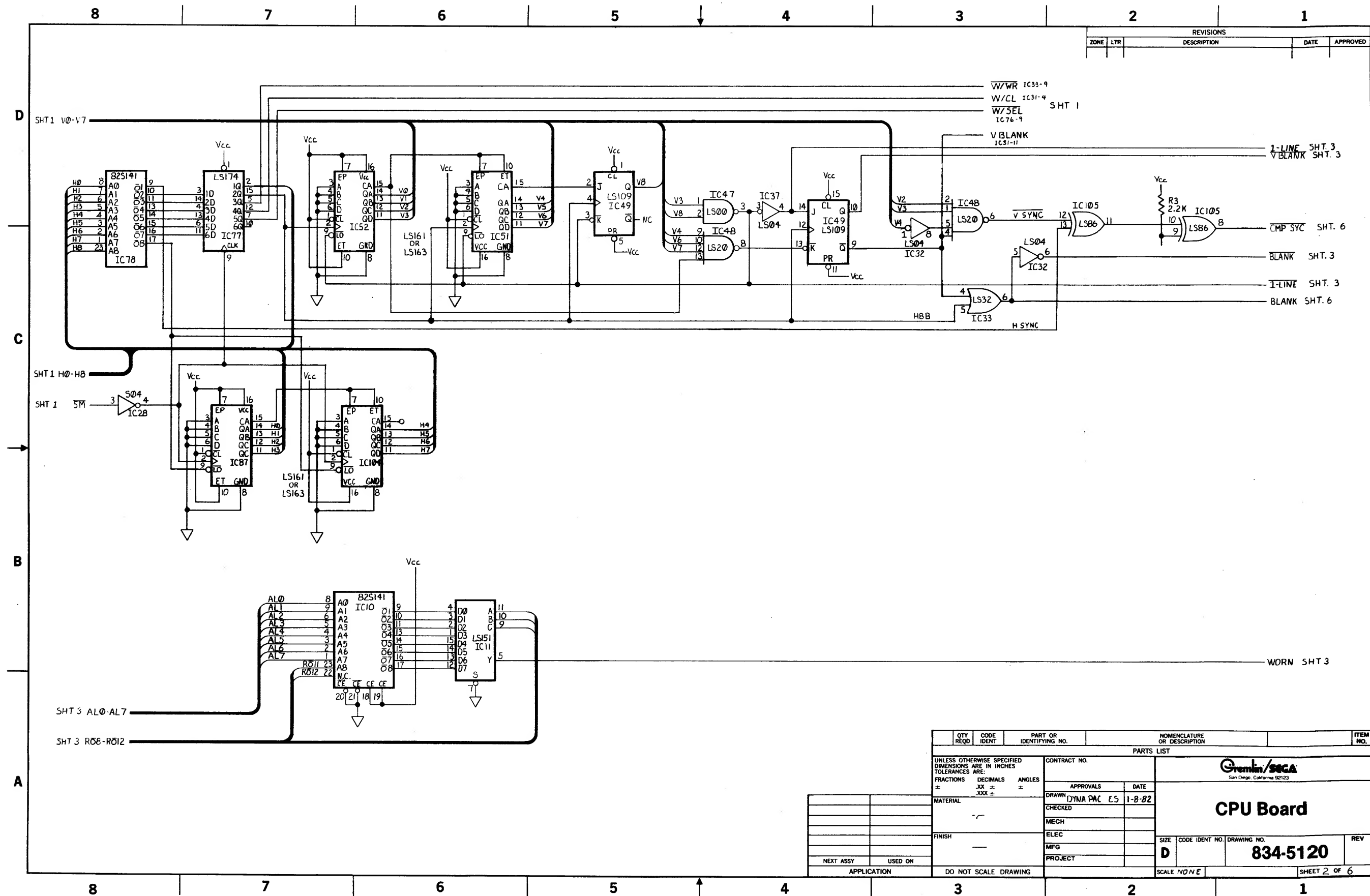
IC77-10 SHT. 2
V BUS SHT. 2
IC77-1B SHT. 2

QTY REQD		CODE IDENTIFYING NO.		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		SHEET		ITEM NO.	
PARTS LIST											
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± .XX ± ± .XXX ±				CONTRACT NO.		<div> San Diego, California 92123</div> <div>CPU Board</div>					
MATERIAL				DRAWN TED		SIZE CODE IDENT NO. DRAWING NO. REV <div>D</div> <div>834-5120</div>					
				CHECKED							
				MECH							
				ELEC							
FINISH				MFG							
				PROJECT							
DO NOT SCALE DRAWING						SCALE		NOM.		SHEET 1 OF 6	

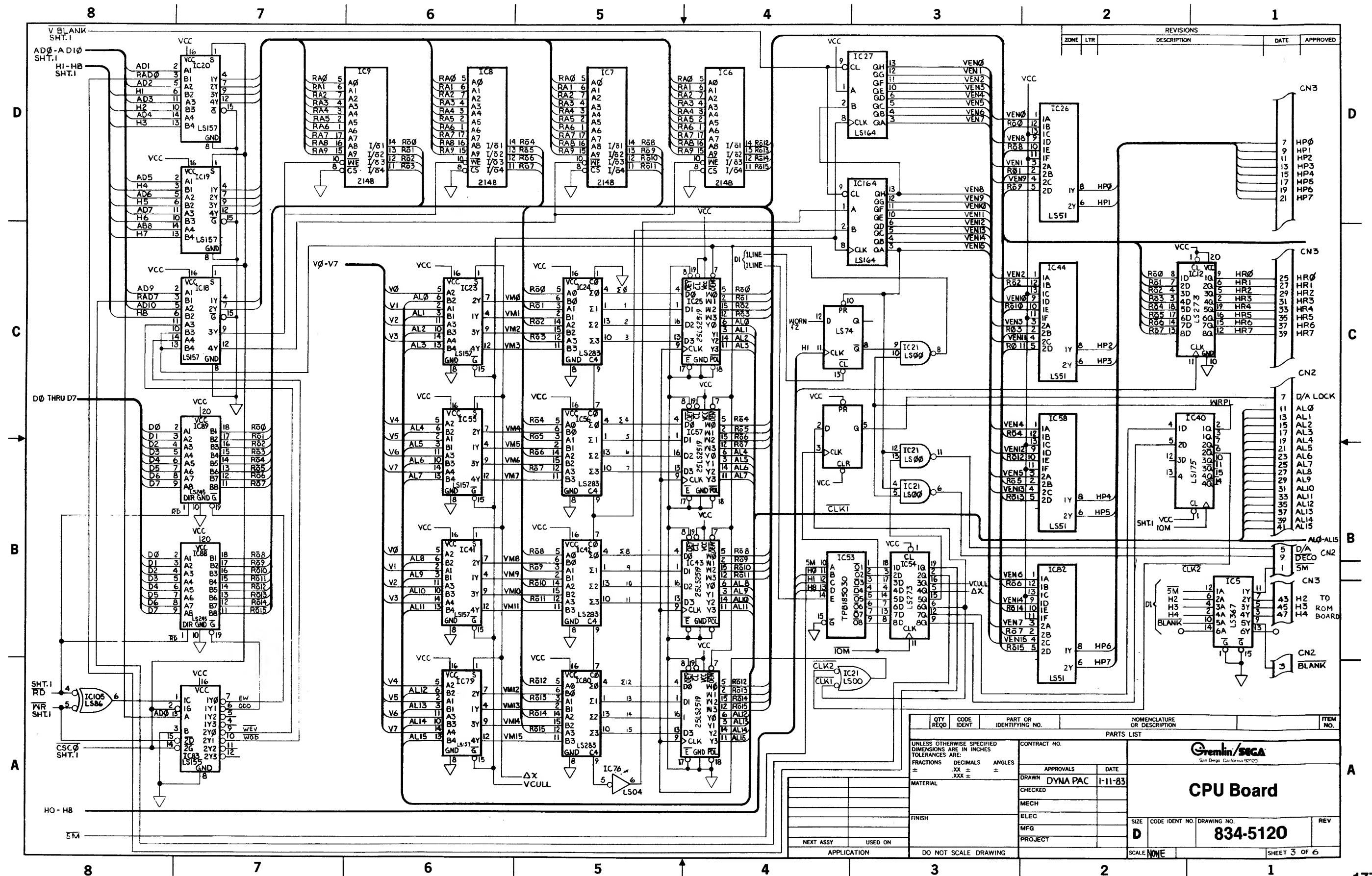
Green/SEGA
San Diego, California 92123

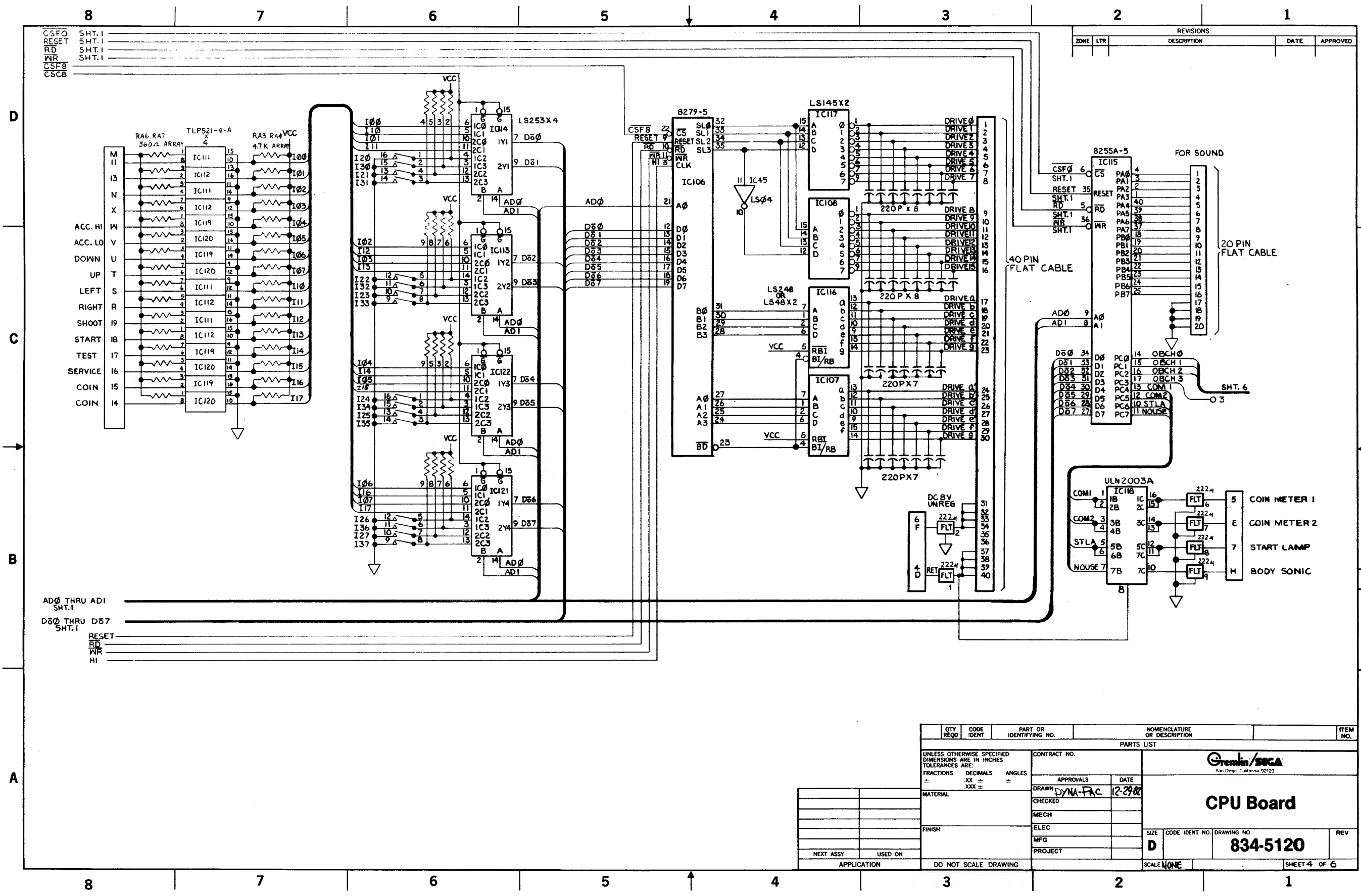
CPU Board

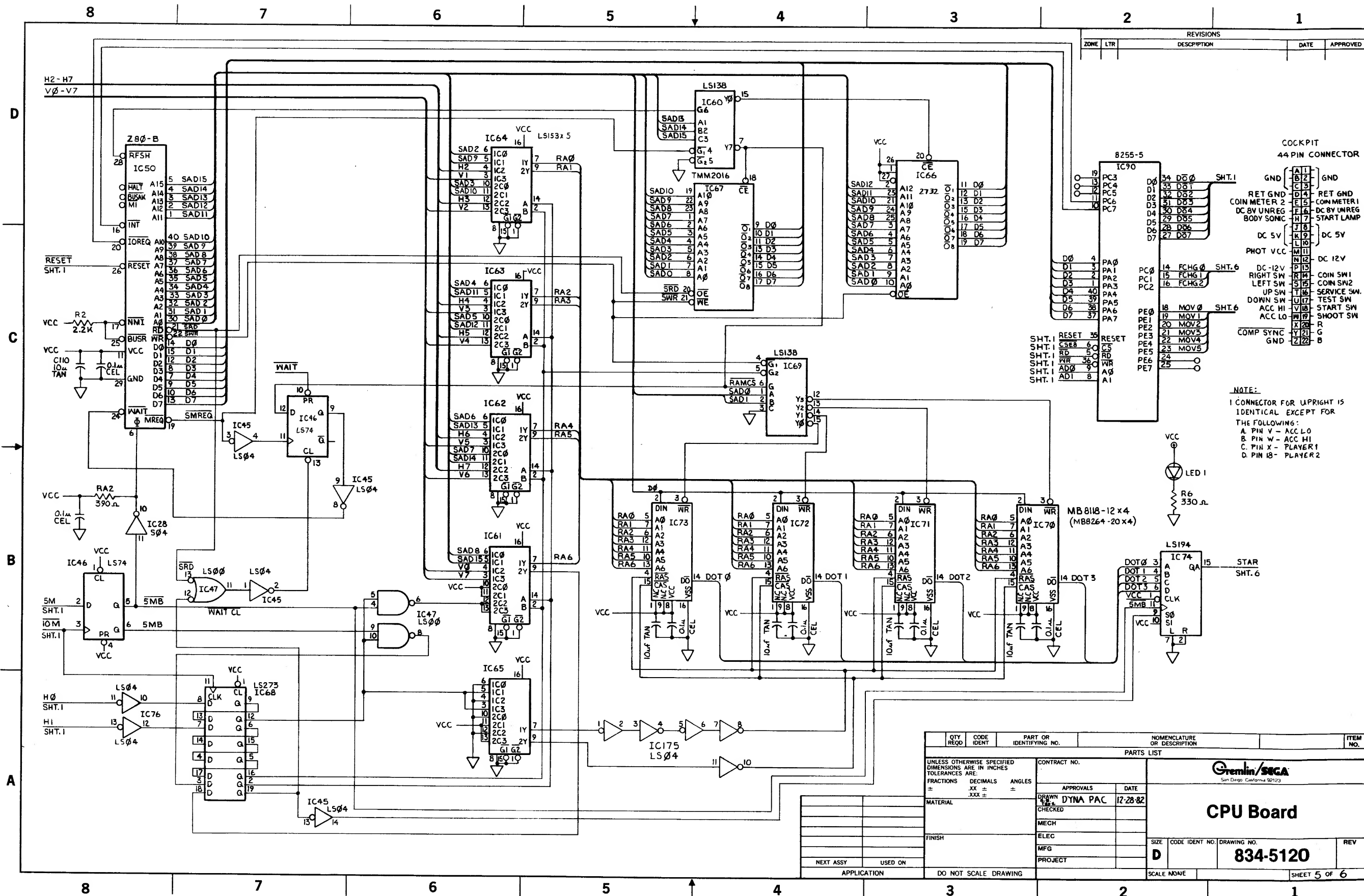
834-5120



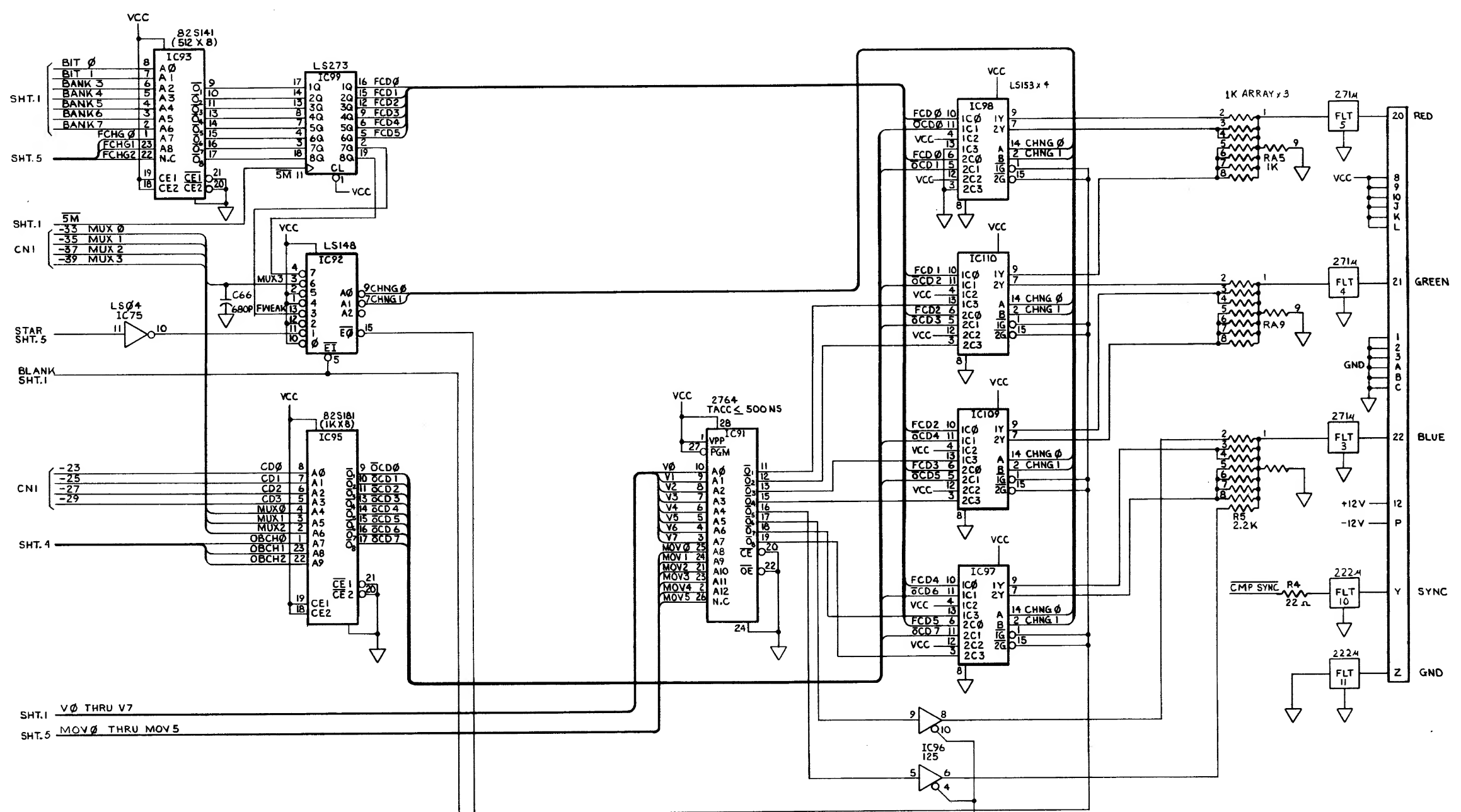
QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:			CONTRACT NO.	
FRACTIONS	DECIMALS	ANGLES	APPROVALS	
±	.XX ±	.XXX ±	DATE	
MATERIAL			DRAWN DYN PAC ES 1-8-82	
FINISH			CHECKED	
NEXT ASSY			MECH	
USED ON			ELEC	
APPLICATION			MFG	
DO NOT SCALE DRAWING			PROJECT	
CPU Board				REV
SIZE CODE IDENT NO. DRAWING NO.				834-5120
SCALE NONE				SHEET 2 OF 6







REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



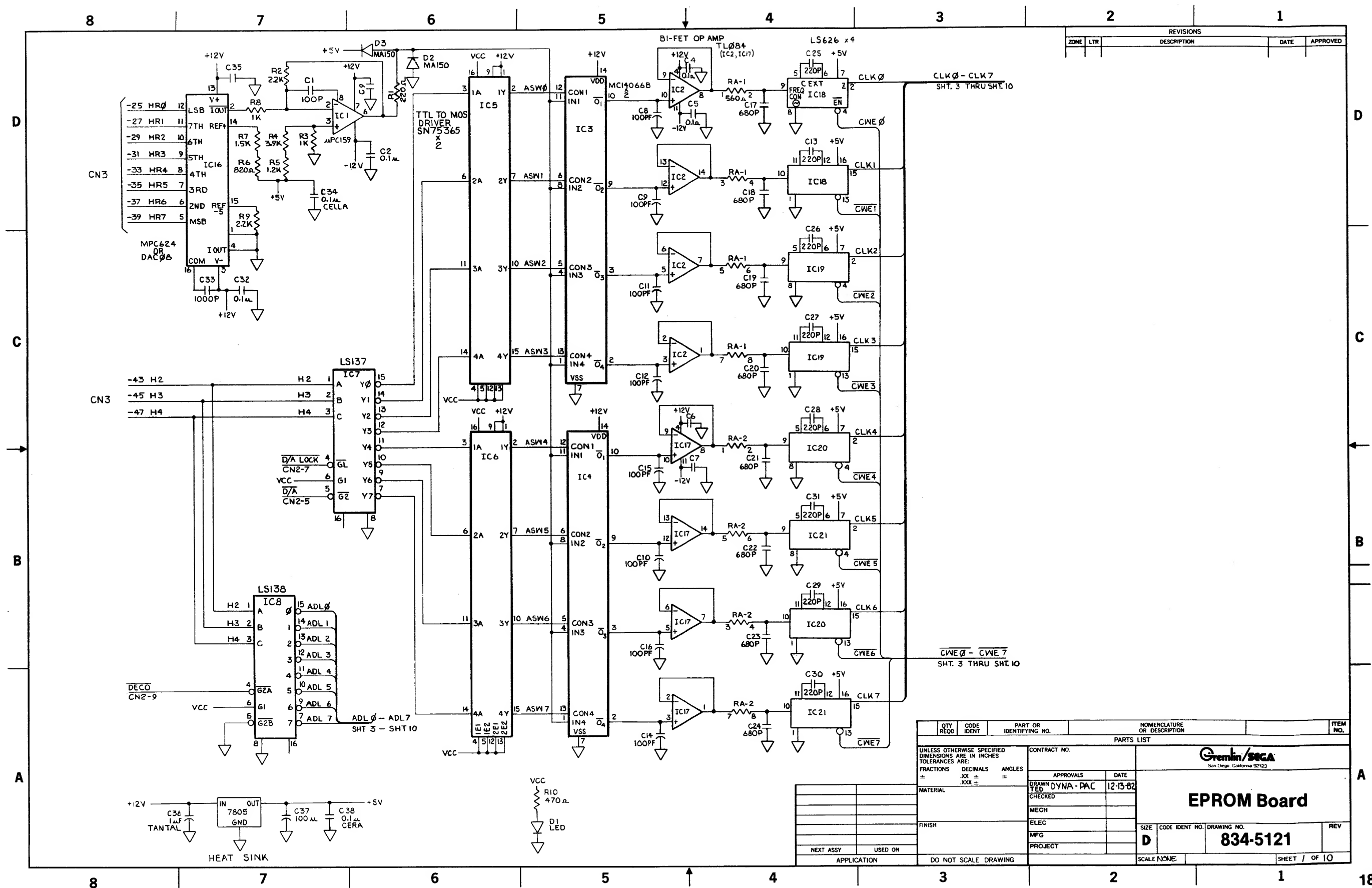
QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		CONTRACT NO.		
FRACTIONS	DECIMALS	ANGLES	APPROVALS	DATE
±	±	±	DRAWN	12-21-82
±	±	±	CHECKED	
±	±	±	MECH	
±	±	±	ELEC	
±	±	±	MFG	
±	±	±	PROJECT	
MATERIAL		DO NOT SCALE DRAWING		
FINISH		SCALE NONE		
NEXT ASSY		USED ON		
APPLICATION		SHEET 6 OF 6		

Gremm/SEGA
San Diego, California 92123

CPU Board

SIZE CODE IDENT NO. DRAWING NO.
D 834-5120

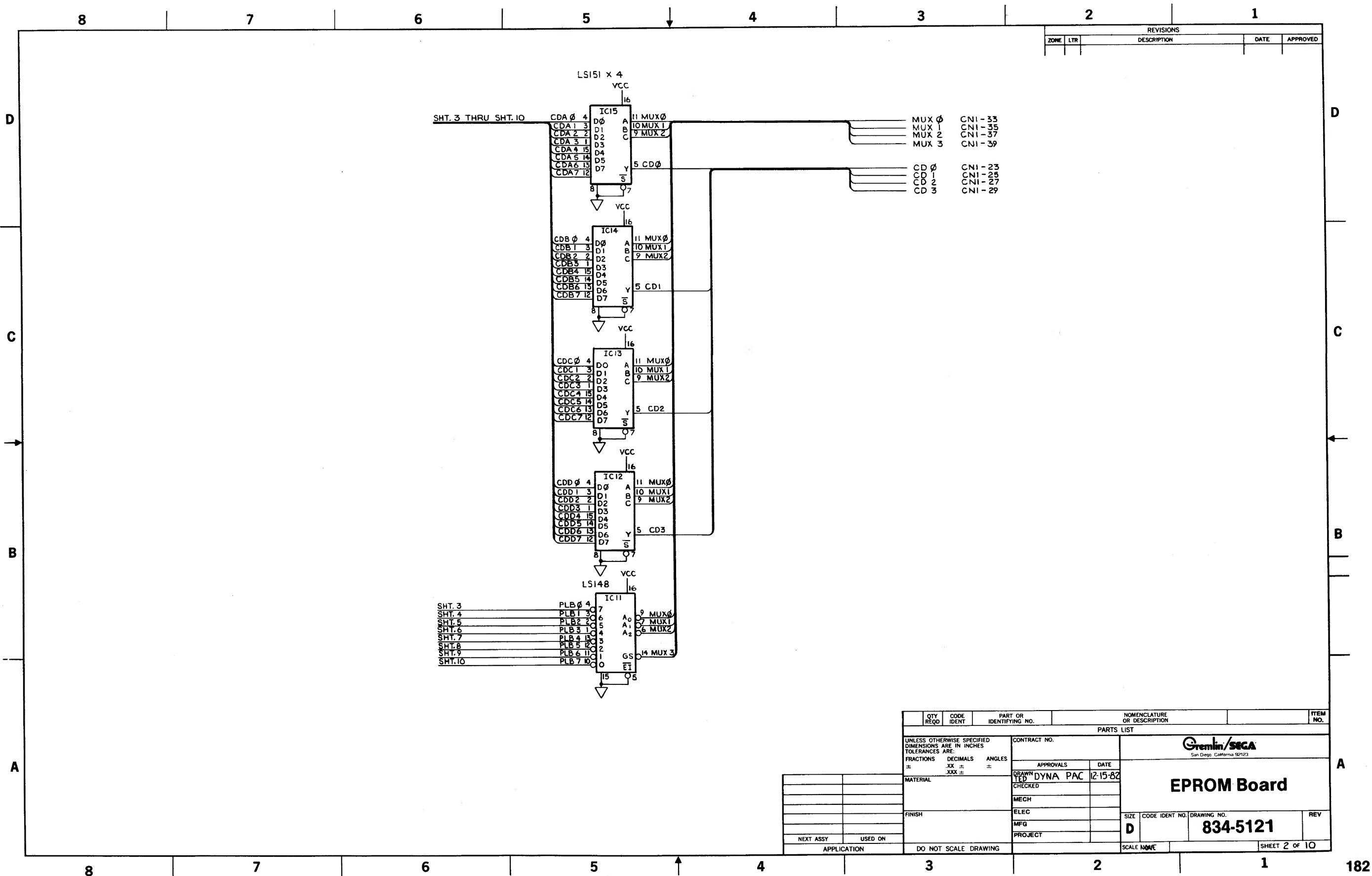
REV

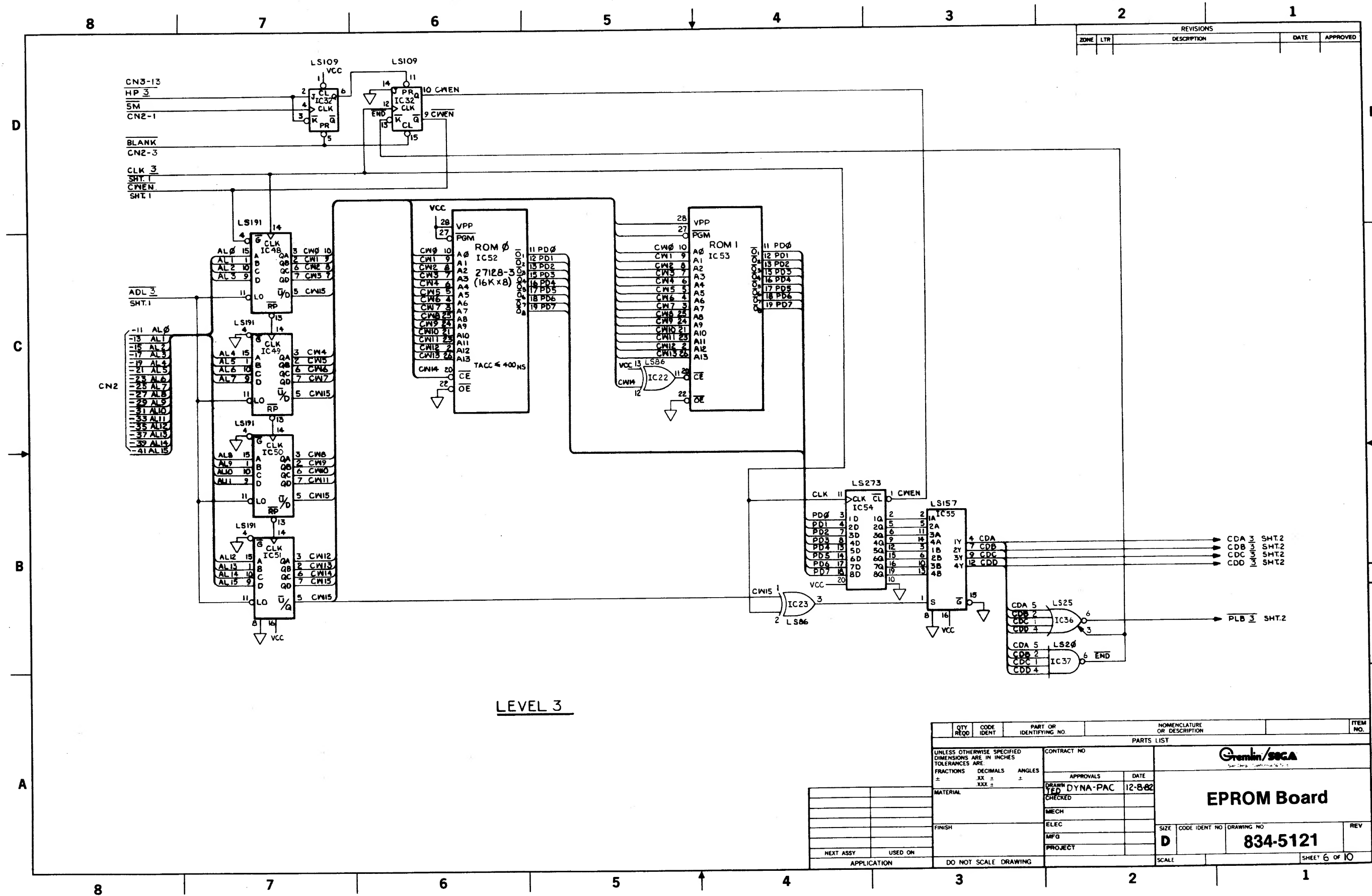


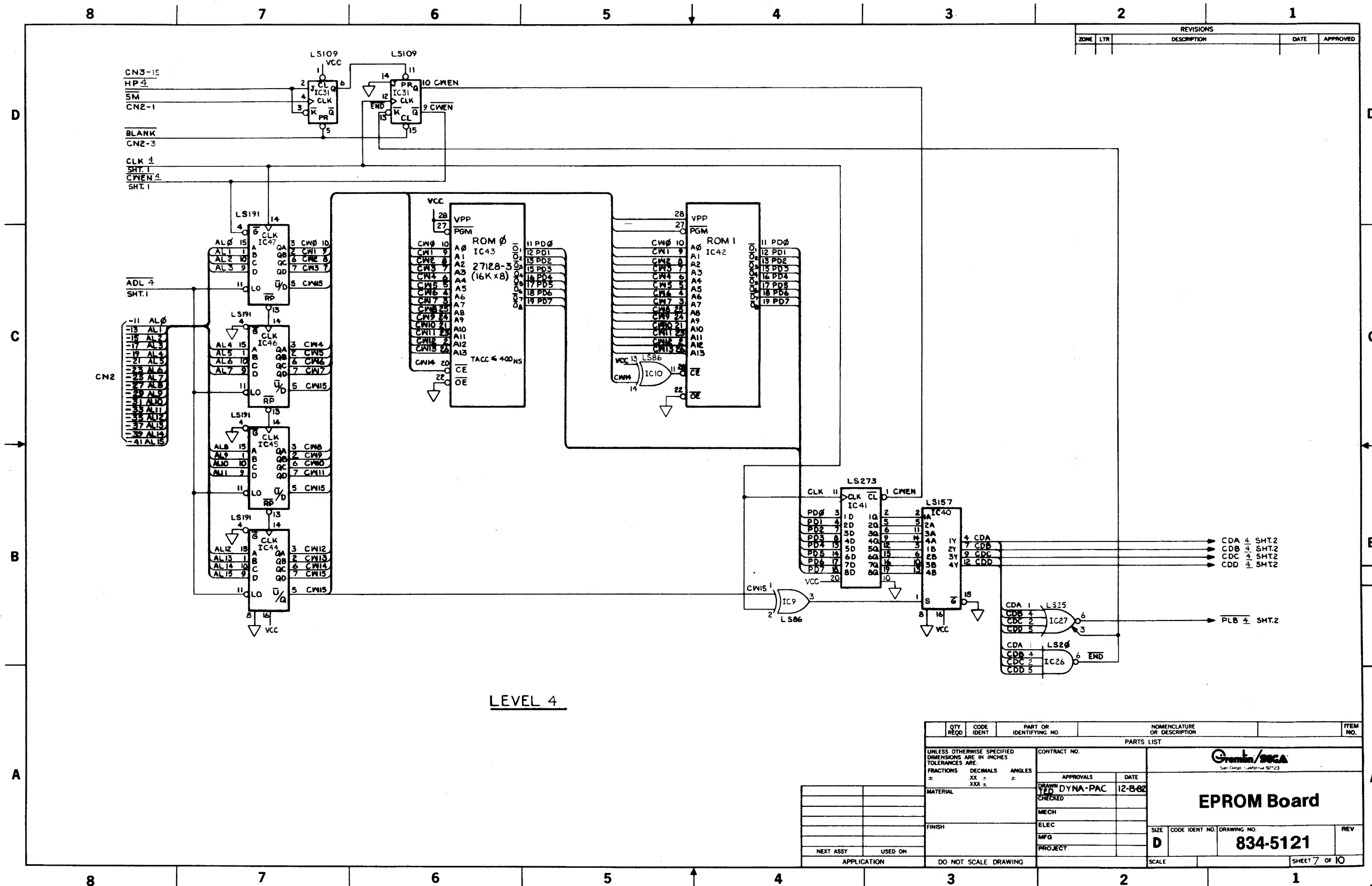
REVISIONS			
ZONE	LTR	DESCRIPTION	DATE

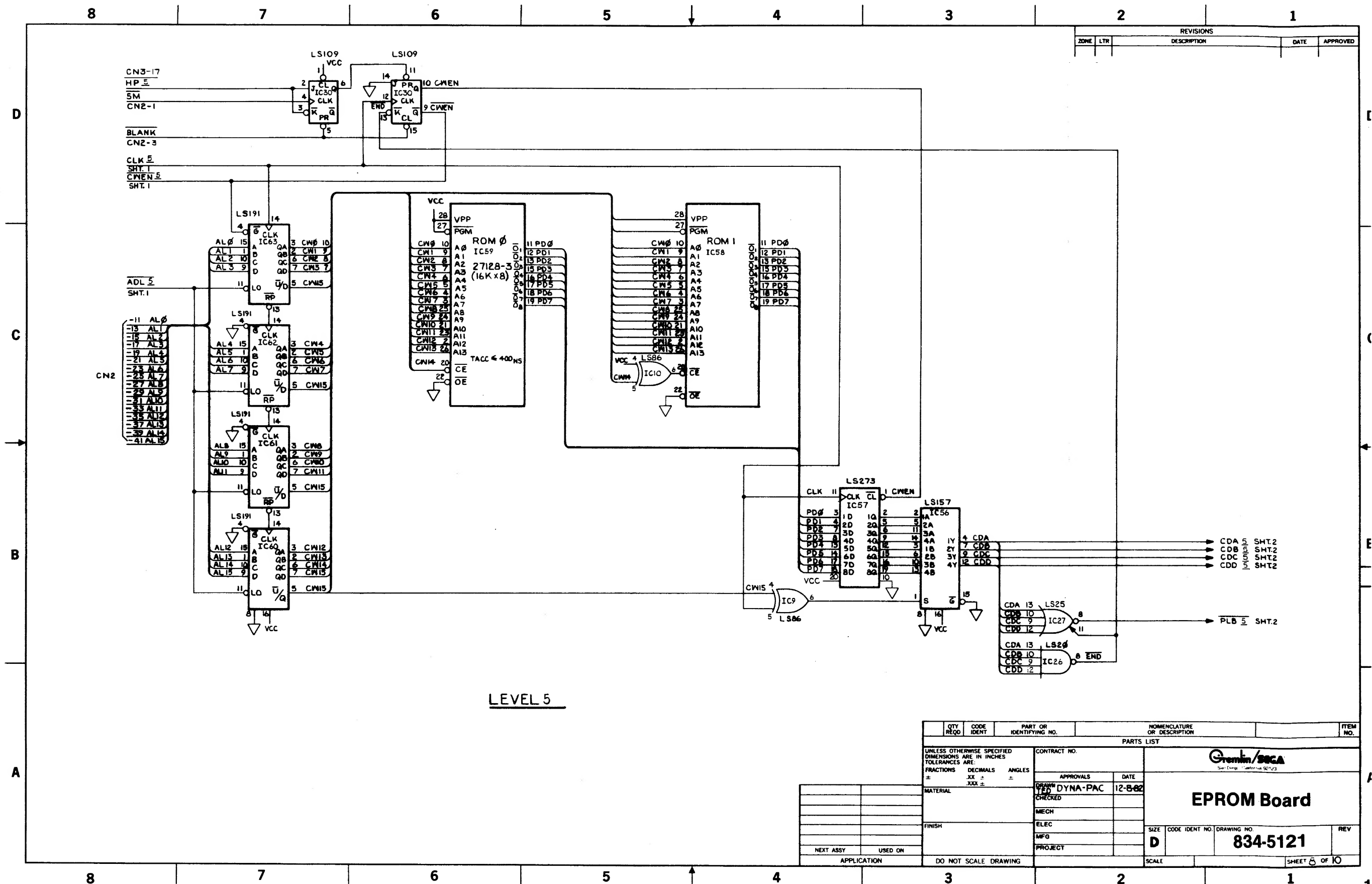
QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± .XX ± .XXX ± °				
CONTRACT NO.		APPROVALS DATE		
DRAWN DYNA-PAC		12-13-82		
CHECKED				
MECH				
ELEC				
MFG				
PROJECT				
DO NOT SCALE DRAWING				
SCALE NONE				
SHEET / OF 10				

EPRM Board	
SIZE	CODE IDENT NO. DRAWING NO.
D	834-5121
REV	

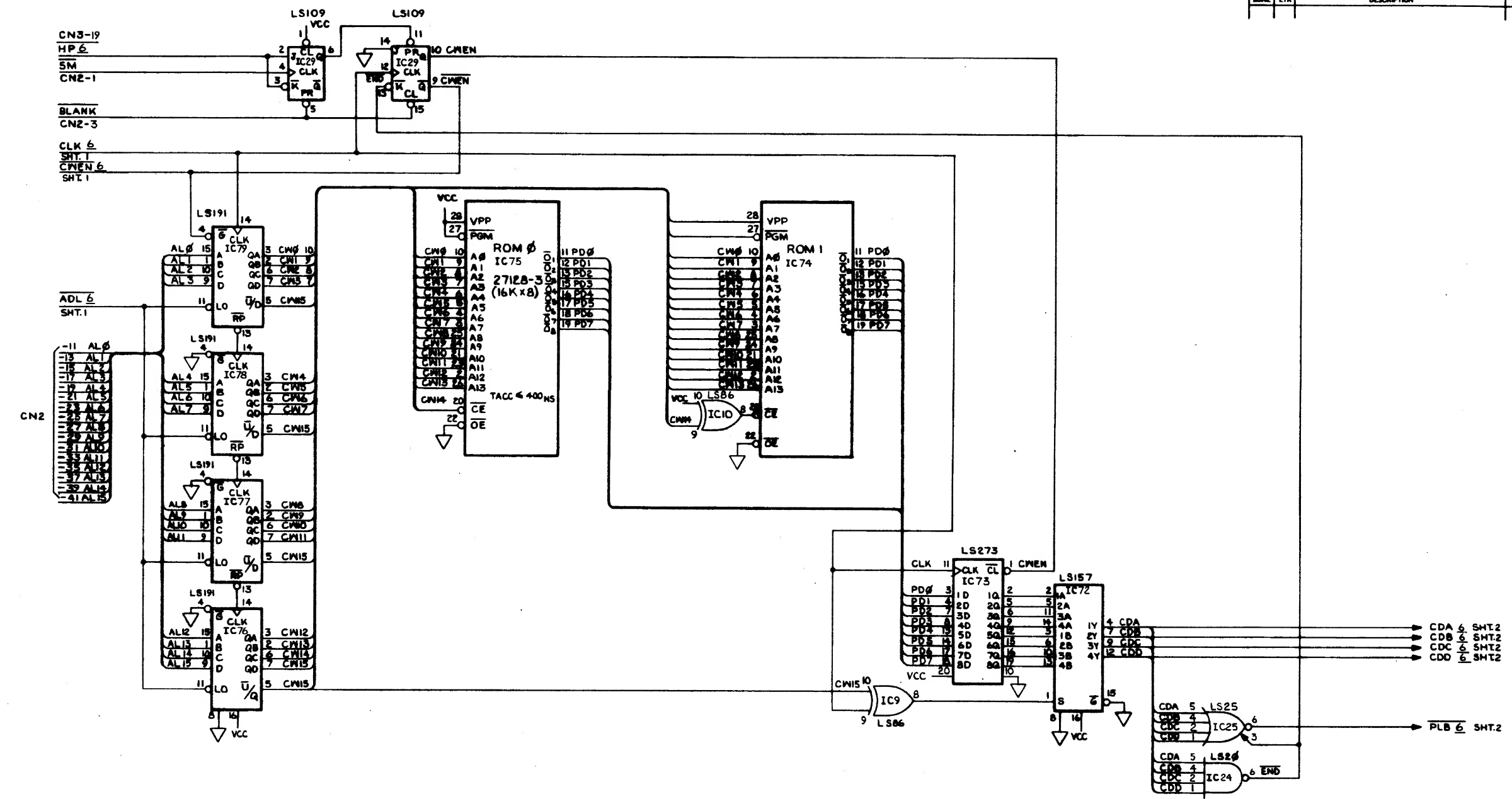








REVISIONS			
ZONE	LTR	DESCRIPTION	DATE



LEVEL 6

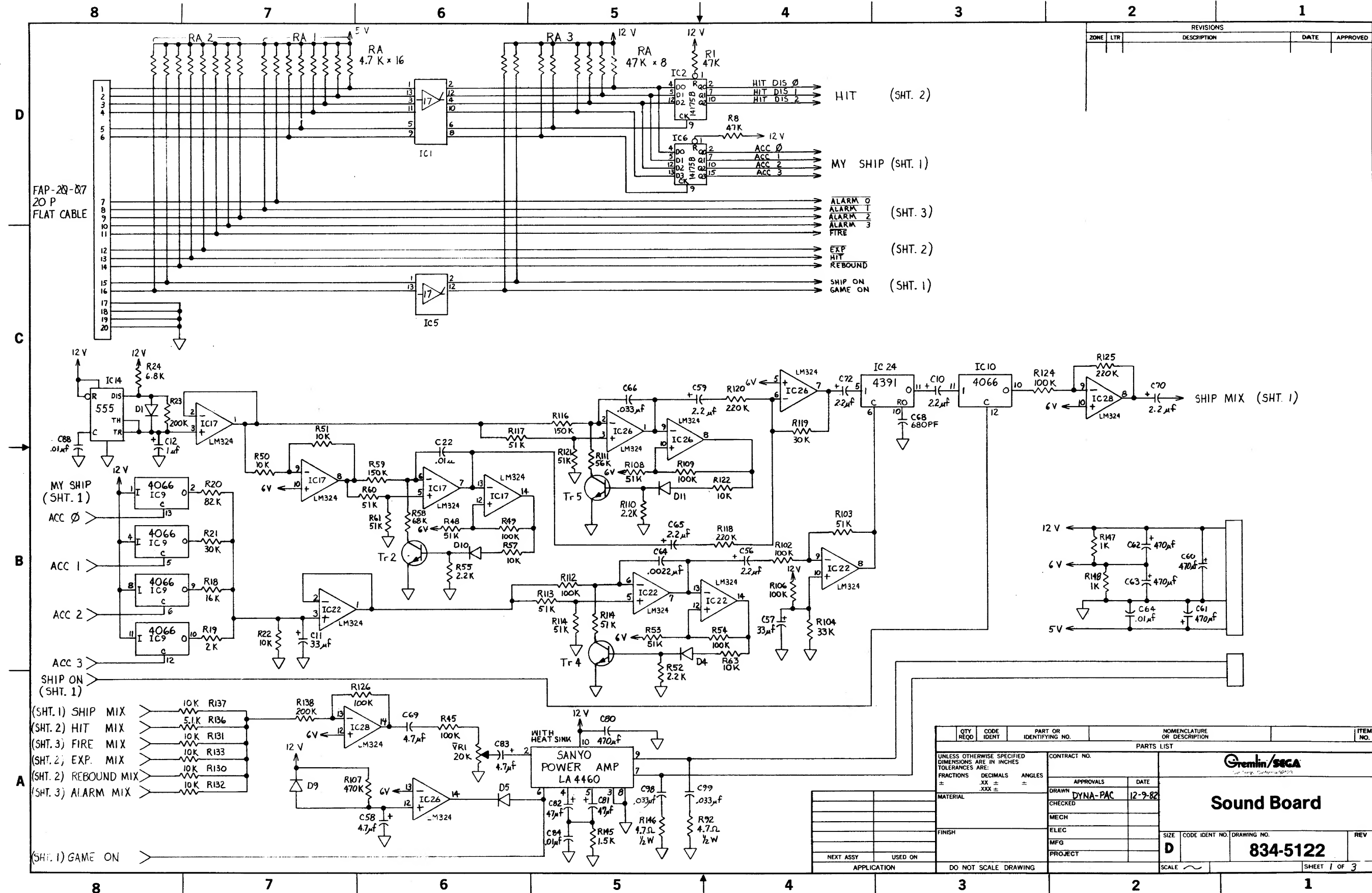
QTY	CODE	PART OR	NOMENCLATURE	ITEM
REQD	IDENT	IDENTIFYING NO.	OR DESCRIPTION	NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:				
FRACTIONS	DECIMALS	ANGLES		
±	JXX ±	±		
MATERIAL		CONTRACT NO.		
		APPROVALS		
		CHECKED		
		MECH		
		ELEC		
		MFG		
		PROJECT		
NEXT ASSY		USED ON		
APPLICATION		DO NOT SCALE DRAWING		
			SIZE	CODE IDENT NO. DRAWING NO.
			D	834-5121
			SCALE	SHEET 9 OF 10

Granite/DCA
San Diego, California 92123

EPROM Board

834-5121

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE



QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		CONTRACT NO.		
FRACTIONS	DECIMALS	ANGLES	APPROVALS	
±	.XX ±	° ±	DATE	
MATERIAL		DRAWN		
FINISH		CHECKED		
NEXT ASSY		MECH		
USED ON		ELEC		
APPLICATION		MFG		
DO NOT SCALE DRAWING		PROJECT		
		SIZE		
		CODE IDENT NO.		
		DRAWING NO.		
		REV		
		D		
		834-5122		
		SHEET 1 OF 3		

